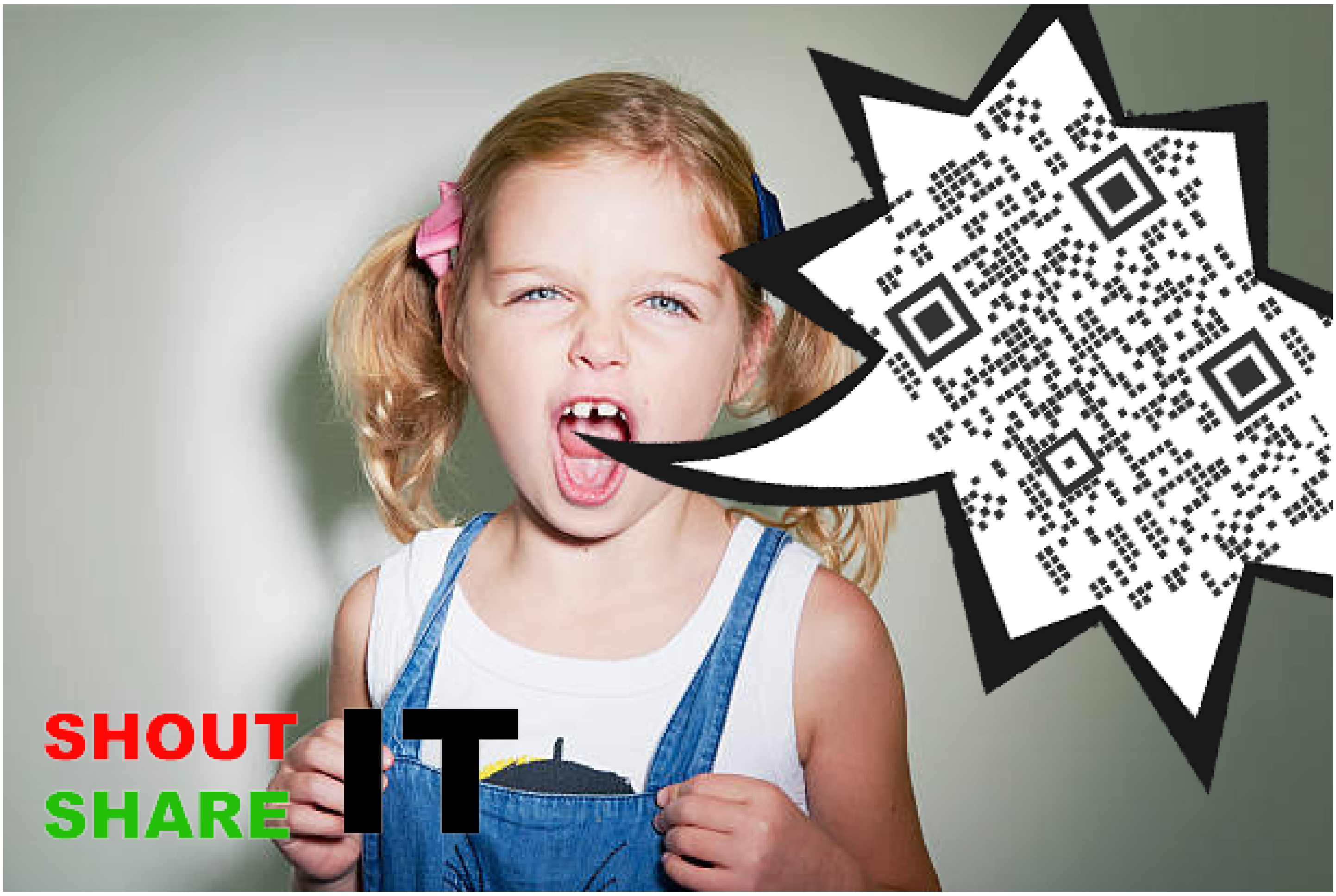
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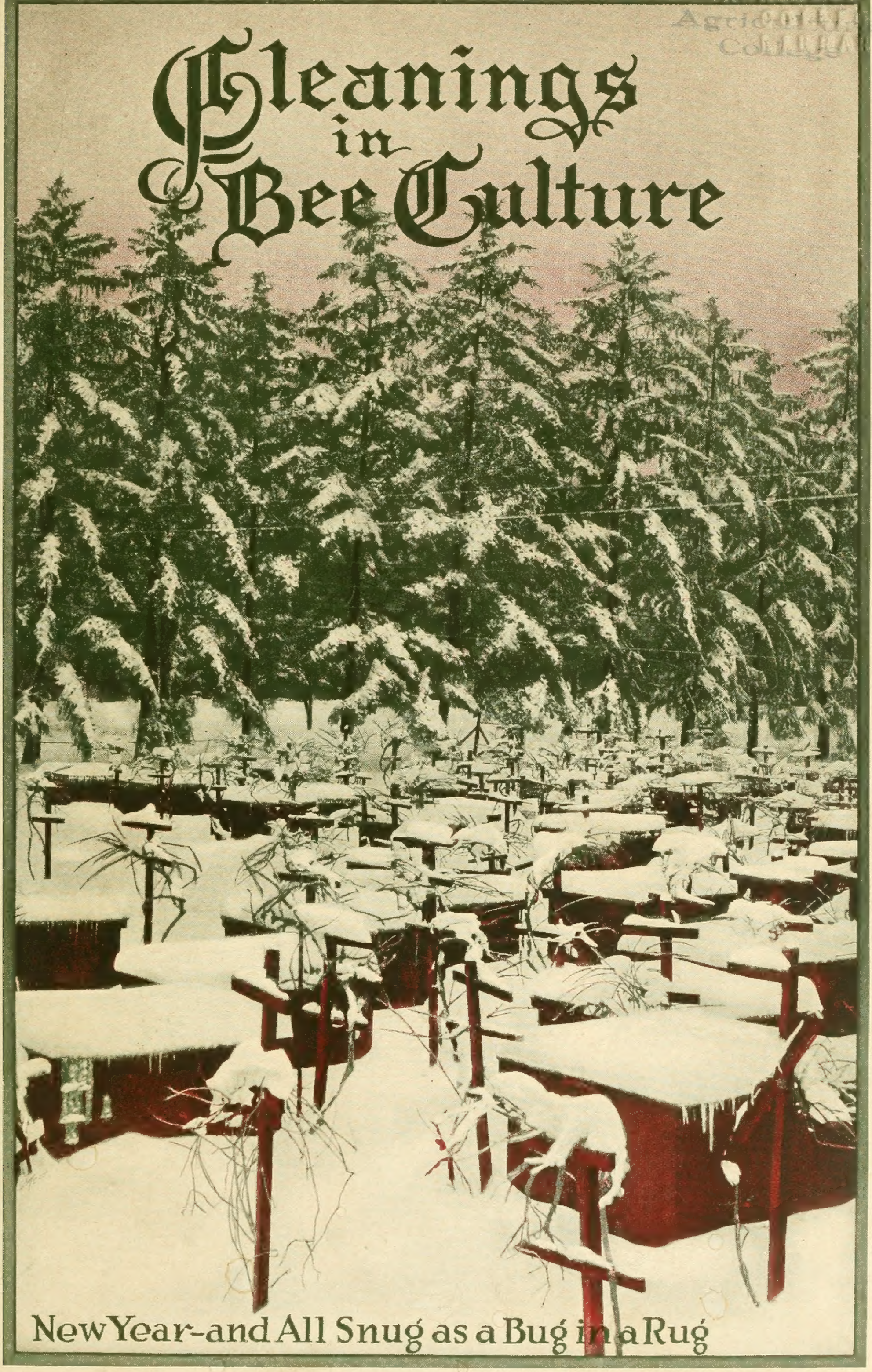
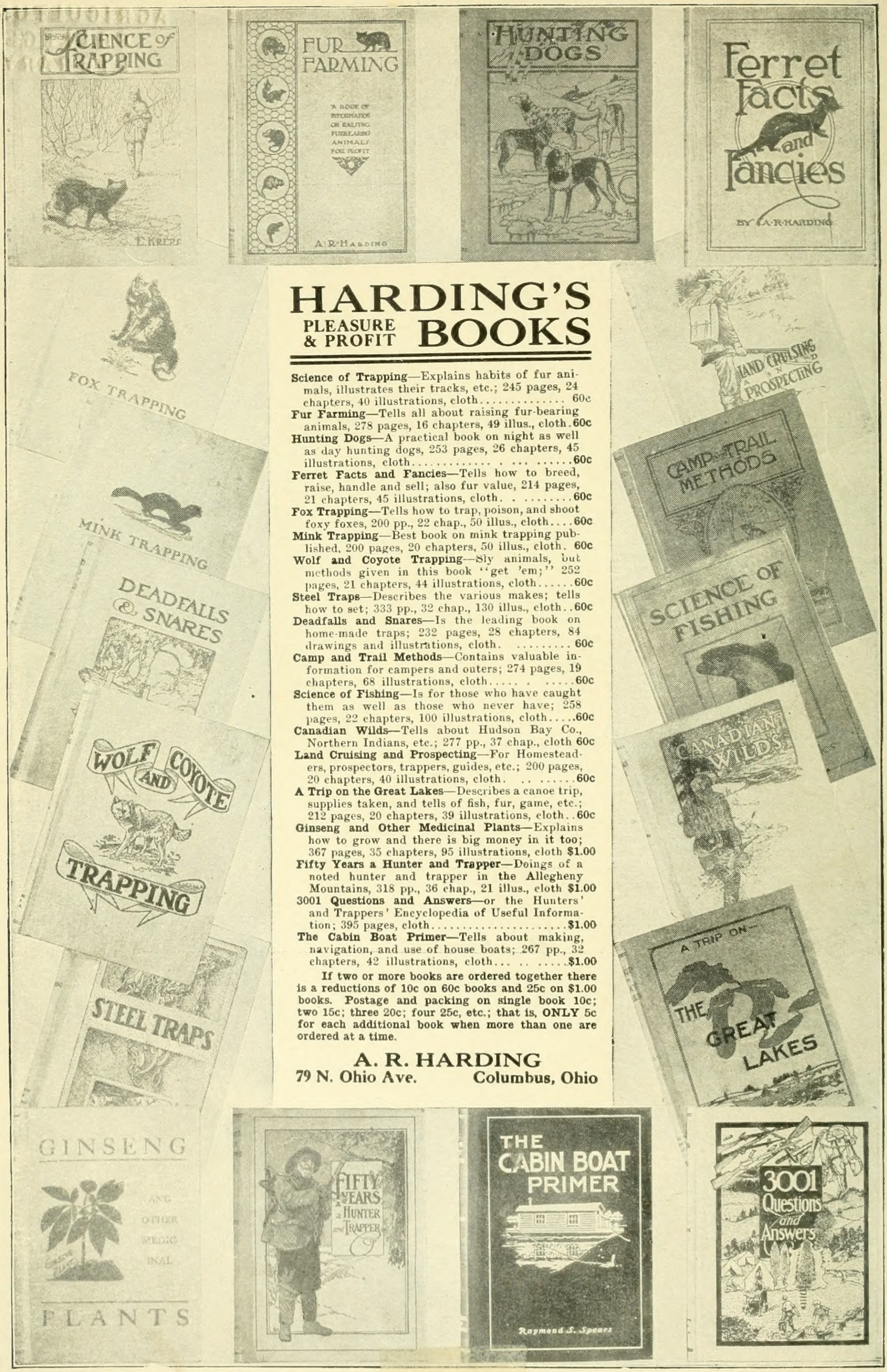
Gleanings in Bee Culture



New Year—and All Snug as a Bug in a Rug

Vol. XLV January 1917 No. 1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A BOOK OF INFORMATION ON RAISING FUR-BEARING ANIMALS FOR PROFIT
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Ferret Facts and Fancies
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79 N. Ohio Ave. Columbus, Ohio

CONTENTS

JANUARY, 1917

Article	Author	Page
Editorials		9
Roadside Marketing	The Editors	13
Out Apiary Management	Edgar Williams	20
Hawaiian Algaroba	Leslie Burr	23
Fallacies in Breeding	Geo. W. Phillips	27
Bees Tried by Fire	E. R. Root	29
Bees vs. Smelters	E. R. Root	30
Conversations with Beekeepers	G. M. Doolittle	32
Letters from a Beekeeper's Wife	''Mary''	33
Two Years of It	Howard C. Pfaltzgraff	34
If Langstroth were Alive	Prof. Jager	35
Selling Honey in England	A. W. Bowen	35
Effective National Advertising	H. Bartlett Miller	36
Crop All Sold Anyway	C. E. Crowfoot	37
Easy Way to Make Syrup	W. P. Clare	38
Hatching Queens Electrically	J. E. Wing	39
Is Mating Possible in Mammoth Greenhouse?	The Editors	40
Beekeeping vs. a Side Line	Grace Allen	43
Stray Straws	Dr. C. C. Miller	45
The Dixie Bee	Grace Allen	46
Notes from Canada	J. L. Byer	47
Siftings	J. E. Crane	48
Among the Rockies	Wesley Foster	49
Florida Sunshine	E. G. Baldwin	50
In California	P. C. Chadwick	51
Beginners' Lessons	H. H. Root	54
Gleaned by Asking	E. R. Root	55
Just News	Editors	56
Nursery Rhymes	M. G. P.	60
Heads of Grain from Different Fields		61
Our Homes	A. I. Root	65
Health Notes	A. I. Root	69

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SHIPPING-CASES FOR COMB HONEY

Don't make the mistake of putting a fine lot of section honey in poor shipping-cases. It will lower the price to you and damage your future sales. "Falcon" cases are A No. 1, and will be a credit to any crop of honey. Prices are as follows:

Shipping-cases in Flat, without Glass.

No. 1	holding 24 sections, 4¼x1⅞, showing 4	10, $2.00	100, $18.00
No. 3	holding 12 sections, 4¼x1⅞, showing 3	10, $2.00	100, $18.00
No. 1½	holding 24 sections, 4¼x1½, showing 4	10, $1.90	100, $17.00
No. 6	holding 24 sections, 3⅝x5x1½, showing 4	10, $1.90	100, $16.00
No. 8	holding 24 sections, 4x5x1⅜, showing 4	10, $1.80	100, $16.00

Shipping-cases with Glass.

				with 3-inch glass		with 2-inch glass
No. 11	Same as No. 1	Nailed, 35c	in flat, 1, 25c	10, $2.30	100, $21.00	100, $20.00
No. 13	Same as No. 3	Nailed, 22	in flat, 1, 15c	10, $1.40	100, $12.50	100, $12.00
No. 11½	Same as No. 1½	Nailed, 35c	in flat, 1, 25c	10, $2.20	100, $20.00	100, $19.00
No. 16	Same as No. 6	Nailed, 30c	in flat, 1, 22c	10, $2.10	100, $19.00	
No. 18	Same as No. 8	Nailed, 30c	in flat, 1, 22c	10, $2.10	100, $19.00	

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W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from.

You Don't Wait for Money When You Ship Muth Your Honey

We Remit the Day Shipments Arrive

We are in the market to buy FANCY AND NUMBER ONE WHITE COMB HONEY, in no-drip glass-front cases. Tell us what you have to offer and name your price delivered here.

Will also buy—

White Clover extracted and Amber extracted.
A few cars of California Water White Sage.
A few cars of California Orange Blossom.

When offering extracted honey mail us a sample and give your lowest price delivered here. We buy every time you name a good price.

We do beeswax rendering; ship us your old combs and cappings. . . Write us for terms.

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"The Busy Bee Men"
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Increase Your Honey Crop

by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested, each, $1; 6, $5. Tested, each, $1.25; 6, $5.50. Breeders, $5.

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Supplies Cheap During the Winter Months

Send me a list of your wants and let me figure on it for you.

Italian Bees, Queens, and Nuclei for season of 1917.

E. A. Leffingwell, Allen, Mich.

HONEY MARKETS

BASIS OF PRICE QUOTATIONS.

The prices listed below, unless otherwise stated, are those at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

PITTSBURG.—On account of holiday business, when trade was confined to practically holiday necessities, the market on honey has been very quiet here with no change in prices. W. E. Osborn Co.
Pittsburg, Pa., Dec. 26.

DETROIT.—Comb honey is quiet for the last ten days. We look for a better demand after the holidays. It is selling at 15 to 16; extracted is in better demand at 8½ to 9. F. P. Reynolds Co.
Detroit, Mich., Dec. 22.

CLEVELAND.—The demand for comb honey is light; and altho the supply in market is limited, there is no advance in prices. We quote fancy comb honey, per case, $3.65 to $3.85; No. 1, $3.50 to $3.60; No. 2, $3.00 to $3.25.
Cleveland, O., Dec. 26. C. Chandler's Sons.

BOSTON.—Honey is somewhat neglected on account of Christmas holiday. We look for a good sale from now on. We quote extra fancy comb honey, per case, $3.50; fancy, $3.25; No. 1, $3.00; No. 2, $2.25. White extracted honey brings 8 to 11.
Boston, Mass., Dec. 26. Blake-Lee Co.

SYRACUSE.—There is no particular change in market conditions here since last report. There is a goodly offering of comb honey moving moderately. Fancy comb honey brings $3.60; No. 1, $3.36. Light amber extracted, in cans, brings 9. E. B. Ross.
Syracuse, N. Y., Dec. 26.

FLORIDA.—The supply of all grades is very limited, and the demand is strong. White extracted honey brings 8 1/3; light amber, in barrels, 5; amber, in barrels, 3½. Clean average yellow beeswax brings 30. S. S. Alderman.
Wewahitchka, Fla., Dec. 21.

HAMILTON.—Demand is quiet, owing to Christmas trade. We quote extra fancy comb honey, per case, $2.50; No. 1, $2.25; No. 2, $1.65. White extracted honey brings 12 in 60-lb. tins; light amber, in cans, 10. F. W. Fearman & Co.,
Hamilton, Ont., Dec. 26. MacNab Street Branch.

MONTREAL.—Stocks are reported short; good local demand. We quote extra fancy comb honey, per case, 17; fancy, 16; No. 1, 15; No. 2, 13. White extracted honey brings 12 to 12½; light amber, in cans, 11 to 11½; in barrels, 10¾; amber, in cans, 10½ to 11; in barrels, 10.
Gunn, Langlois & Co., Ltd.
Montreal, Can., Dec. 23.

ALBANY. — Comb honey is slow selling; none since the extreme cold weather, and will be dull thruout winter. Our stock is not large. We quote fancy comb honey, 14 to 15; No. 1, 12 to 13; No. 2, 11 to 12. White extracted honey brings 8 to 8½; light amber, in cans, 7 to 7½. Clean average yellow beeswax brings 30 to 32. H. R. Wright.
Albany, N. Y., Dec. 26.

TEXAS.—Good demand for honey but little offered. We quote No. 1 bulk comb honey, 10½ to 11 in 60-lb. cans; No. 2, 9½ to 10; ½ cent advance for smaller sizes. Light amber extracted honey, in cans, 8½ to 9; in barrels, 7½ to 8; amber, in cans, 7½ to 8; in barrels, 6½ to 7. Clean average yellow beeswax brings 27 to 28. J. A. Simmons.
Sabinal, Tex., Dec. 27.

BUFFALO.—Receipts of honey are increasing, with very light demand, and practically no trading. The usual dullness during holiday season is on, and we may expect a light demand for the next month. We quote extra fancy comb honey, per case, at 15; fancy, 14½; No. 1, 14; No. 2, 12 to 13. White extracted honey brings 8 to 8½; light amber, in cans, 7½; amber, in cans, 6½ to 7.
Buffalo, N. Y., Dec. 26. Gleason & Lansing.

KANSAS CITY.—The demand for comb honey is still slow and draggy. We do not look for much change until after February 1, or until we get some real cold weather. Extracted honey is very firm. No. 1 comb honey brings $2.75; No. 2, $2.50; light-amber extracted, in cans, brings 8½; amber, in cans, 7½ to 8. Clean average yellow beeswax brings 25. C. C. Clemons Produce Co.
Kansas City, Mo., Dec. 26.

PORTLAND.—No great demand for comb honey at present. The local crop all in, so far as we know. The extracted demand is rather sluggish, altho prices are firm. We quote extra fancy comb honey, per case, $3.50; fancy, $3.25; No. 1, $3.00; No. 2, $2.90. White extracted honey, per lb., 8½; light amber, in cans, 8; amber, in cans, 7½. Clean average yellow beeswax brings 25 to 26.
Portland, Ore., Dec. 19. Pacific Honey Co.

LOS ANGELES.—These prices are what the retailer pays our wholesale customers, not what we are buying at. No supply of extracted, except for local use. Surplus of comb with little demand. Local prices unchanged, with little honey being used. We quote extra fancy comb honey, per case, $4.25; fancy, $3.85; No. 1, $3.25; No. 2, $2.50. White extracted honey brings 8½; light amber, in cans, 8; amber, in cans, 7. Clean average yellow beeswax brings 35.
Los Angeles, Cal., Dec. 21. Geo. L. Emerson.

NEW YORK.—The demand for comb honey has fallen off considerably of late, as is generally the case at this time of the year; and, while there is no stock, receipts are sufficient to meet the demand. We quote fancy white at 15; No. 1, 14; lower grades, 12 to 13; dark and mixed, 10 to 11. Extracted honey is in good demand. White clover seems to be pretty well cleaned up, while other grades are in good supply. Prices seem to run rather irregular. We quote white from 8 to 9; light amber, 7 to 8; dark, 6 to 7. Beeswax brings 30 to 32.
New York, Dec. 26. Hildreth & Segelken.

ST. LOUIS.—Our honey market is unchanged since our last quotation. Comb honey is still moving very slowly, but there is a better demand for extracted honey. This market is well supplied with comb honey, but is running rather short on Southern extracted of good flavor. We quote extra fancy comb honey, per case, $3.75; fancy, $3.50; No. 1, $3.00 to $3.25; No. 2, $2.50 to $2.75. Light amber extracted honey, in cans, brings 9 to 10; amber, dark, in cans, 7½ to 8. Clean average yellow beeswax brings 32.
R. Hartmann Produce Co.
St. Louis, Mo., Dec. 22.

CHICAGO.—Comb honey continues to drag; 100 lbs. of extracted to 10 lbs. of comb is about the average in sales during the past month. So active is the demand in extracted that the price has advanced on all grades 1 ct. or about per pound. The best grades of white clover are now commanding 10 cts., and it looks as tho all of it were going to go into consumption before the coming of another crop. Various reasons have been assigned for the unusual consumption of extracted versus comb. One we frequently hear is that it is taking the place of butter and preserves, as children are now getting honey on their bread instead of jam. Beeswax sells at from 28 to 30 for the ordinary grades; and if free from sediment, and bright in color, 32.
Chicago, Ill., Dec. 18. R. A. Burnett & Co.

SAN FRANCISCO.—All grades of extracted honey have been in good request, and the demand continues, and especially is extra light amber wanted. Doubtless much of the local buying has been caused by dealers in the bottling trade investing in quantities for late winter and spring use. Manufacturers and preserving companies who put up honey in containers generally report business brisk—local, shipping, and foreign. We quote extra fancy comb honey, per case, $3.00; fancy, $2.75 to $2.85; No. 1, $2.25 to $2.50: No. 2, nominal. White extracted honey brings 8 to 8½; very little offering; light amber, in cans, 7 to 7½; amber, in cans, 6 to 6½. Clean average yellow beeswax brings 26 to 29.

Leutzinger & Lane.

San Francisco, Cal., Dec. 20.

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The BARKER Weeder, Mulcher and Cultivator

The only garden tool that successfully, in one operation, *kills weeds*, and forms a complete *soil mulch* to hold moisture. "Best Weed Killer Ever Used." A boy with a Barker beats ten men with hoes. Has shovels for deeper cultivation. Self adjusting. Costs little. *Write for illustrated folder and special Factory-to-User offer.*

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After May 1st, prices on application. A discount of 5 per cent on all orders for queens or bees by the pound during January when cash accompanies the order.

Yours for a busy season

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Now is the time to order your supplies for next season, and have everything in readiness for next Spring. Take advantage of the early-order cash discount, and send us a list of the supplies wanted, and we will be pleased to quote you. We will mail you our catalog upon request; in short, we handle everything a beekeeper requires for the proper conduct of an apiary; Root's goods at factory prices.

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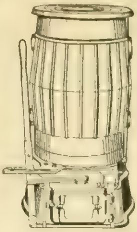
Water Heaters for
House Heating

Heats bath and kitchen boiler too. ONE STOVE AND ONE FIRE YEAR ROUND. There is nothing like it. Send for booklet.

S. V. Reeves, Mfr.
Haddonfield, N. J.



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The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

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High Hill, Montgomery Co., Mo.

PENNSYLVANIA BEEKEEPERS

Our catalogs now out. Postal will bring you one. Root's goods at Root's prices. Prompt shipment.

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Bees sometimes starve with plenty of honey in the hive. Why not avoid this risk by placing a plate or two of candy on the frames when you pack for winter? It is a good life insurance. Send for circular also catalog of supplies.

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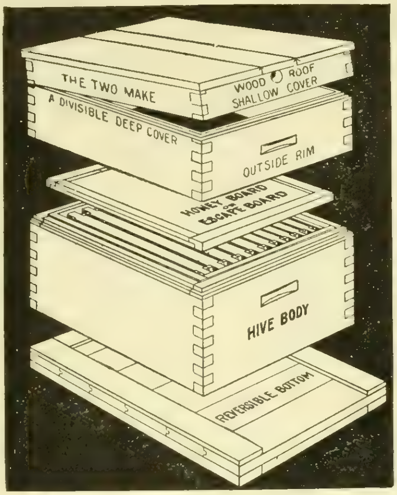

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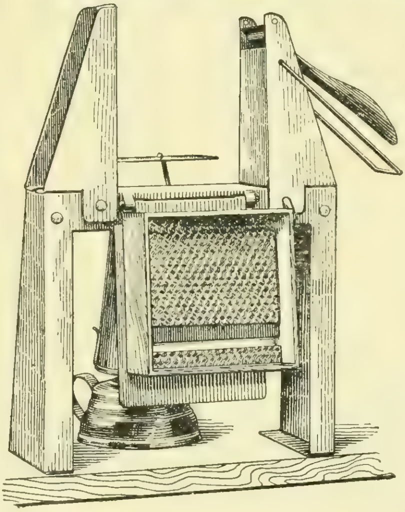
Price $13.75 for 5 hives, f. o. b. Grand Rapids, Mich. Delivered prices furnished on request. Double wall with air spaces, insulation, or packing as you may prefer. Over an inch of space between the outer and inner walls. Total wall space two and a quarter inches. If you have ever had occasion to spend any time in a building single-boarded, during cold weather, you can appreciate the advantages of double walls. Even with a redhot stove you are freezing on one side and roasting on the other. Double walls relieve this condition and reduce the quantity of fuel necessary. Honey is the fuel, the bee the stove. The life of the bee as well as the stove depends on its work; do not burn them out. Send for catalog and special circulars. We are the beehive people. Send us a list of your requirements for 1917 and let us figure with you. Small as well as large orders are wanted. Let us add you to our list of many pleased customers in all parts of the country.



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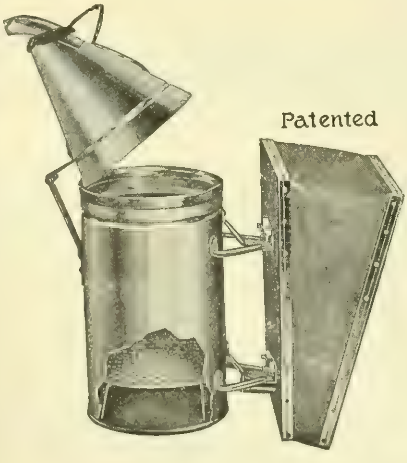
A combined section-press and foundation-fastener of pressed-steel construction. It folds the section and puts in top and bottom starters all at one handling, thus saving a great amount of labor. With top and bottom starters the comb is firmly attached to all four sides — a requirement to grade fancy. Increase the value of your crop by this method. H. W. Schultz, of Middleton, Mich., in writing us says: "Your section-fixer is the best yet; can put up 150 sections per hour with top and bottom starters." Price with lamp, $2.75. Shipping weight 5 lbs. Postage extra. Send for special circular fully describing this machine.



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has been on the market nearly forty years, and is the standard in this and many foreign countries. It is the all-important tool of the most extensive honey-producers of the world. For sale direct or by all dealers in beekeepers' supplies.

Smoke Engine, 4-inch stove	$1.25
Doctor, 3½-inch stove	.85
Two above sizes in copper, 50 cts. extra	
Conquerer, 3-inch stove	.75
Little Wonder, 2½-inch stove	.50
Hinged cover on two larger sizes.	
Postage extra.	

A. G. Woodman Co.
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Order Your 1917 Supplies from Syracuse

We Carry the Largest Line in New York State

And are fully prepared to fill your order at once, as we have just received five more carloads of fresh supplies from the factory. Many last year got left on their five-gallon cans, as we were sold out early. This year we have almost twice as many in stock; but to be sure of them you better place your order now. They keep.

Hives and supplies purchased now can be put together in a good workmanlike way, and painted during the idle winter days, and they will be ready when the bees swarm in the spring.

We have 10 old-style Chaff Hives, eight-frame, and one gross of one-pint premium jars that we should like to dispose of. Send for price.

Send for our 1917 catalog with new prices.

F. A. Salisbury, Syracuse, New York

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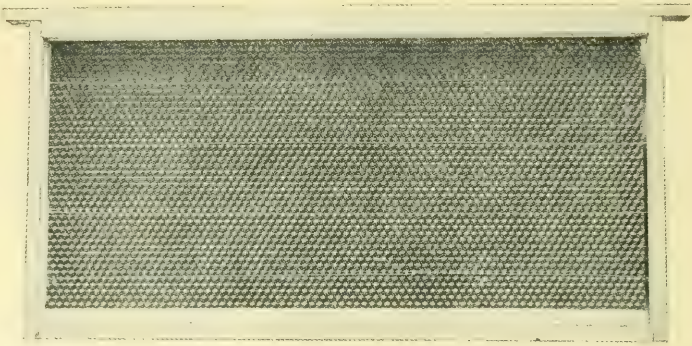
Full Sheets of

Dadant's Foundation

in all your Brood-frames and Sections



1—Mean nice straight combs for you to handle.

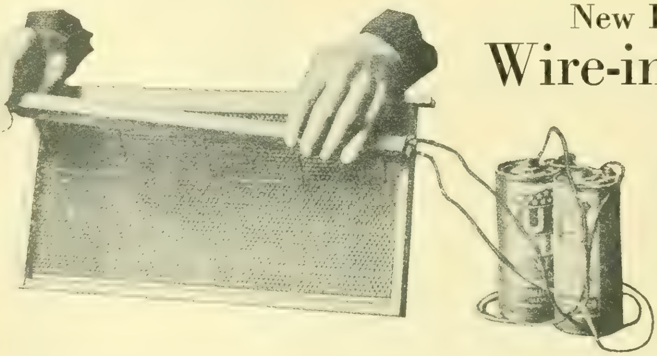
2—Save the bees time, work and honey.

3—Prevent a useless aggregation of drones which do not produce but consume a large quantity of honey.

4—Mean a maximum force of worker bees to gather the crop.

Besides, Dadant's Foundation is always sure to be accepted by the bees as promptly as it is given to them. Tests by practical beekeepers have shown that they accept "Dadant's" first.

All these points insure a maximum crop of honey stored in the best shape for either home use or for market.



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GLEANINGS IN BEE CULTURE

JANUARY, 1917

EDITORIAL

THE DAWN OF A NEW DAY

FOR ALL OF US it is the New Year's season. We have hung up the new calendar for 1917 and before us lies a clean new slate on which to write the record of another year. But, for the beekeeping world there is good warrant for believing that something more than a new year is just ahead—there is dawning a new day of a long and better era in the beekeepers' world. Our East is already brightly streaked with its certain promise. If we were to characterize this new day we would call it the Day of Betters—better bees, better equipment, better beekeeping, better beekeepers, better training, better knowledge, better markets, better prices, better appreciation of our profession and of the importance of honey—better everything along the whole line reaching from the larva in the brood-combs to the honey service of a palace Pullman.

Let us subpoena the facts to prove the case—to give substance to the prophecy of the new and better day that we declare to be already breaking above the beemen's eastern horizon. These prophetic facts are all abundant enough—it is only hard to array them in their sequence and importance.

As a first instance, let us turn back a dozen years and inquire concerning the status of the beekeepers' profession even so short a time ago. At that time how many agricultural schools had given any recognition to apiculture? Not one. What had the national government in its Department of Agriculture done for the beekeeper and his calling? Very little.

To day we may safely say that never in the history of beekeeping has there been so great an opportunity for education. Congress, in appropriating $5000 in extension work in apiculture, has established, in three different states, government experts whose business it is to help, teach, and encourage. Agricultural colleges in ten states are offering courses in beekeeping. Valuable and instructive government and state bulletins are available in increasing numbers. There are more and better books on the subject; and while there are fewer apicultural journals they are of a higher class.

New states are passing inspection laws; and other states having laws inadequate are rapidly repealing them and passing better ones. More efficient inspectors are being appointed, and the whole work of inspection is being put on a firmer foundation. At the same time the various brood diseases are making beekeeping an intolerable nuisance for the careless, slipshod beekeeper, so that the conditions for the progressive man in the industry are far safer.

Improved methods have made honey production easier, and at the same time the demand for honey has increased all out of proportion to the increased production. It may be bought in any grocery. Thousands of families who never thought of using honey are now substituting it for so much sugar, finding it more healthful while no more expensive in the end. So great is the demand, in fact, that the extracted-honey market this year, in the majority of localities, was almost bare by the holidays.

Beekeeping has truly become a man's business that commands the respect of every one. Truly the new day has dawned—a brighter day—a day full of possibilities and of opportunities for success.

PROFITABLE FOR ALL HONEY-SELLERS

AT FIRST THOUGHT, one might suppose that selling honey from the doorstep of the beekeeper (as exemplified in the article on "The Roadside Market" in this issue) can be of interest only to small producers, and that those who number their colonies by the hundreds can not dispose of any appreciable amount of honey in this way. As a matter of fact, however, every large producer has a certain amount of dark honey not quite up to grade. In cases of comb honey there are always some sections in which the combs are not firmly attached all around to the wood; others wherein the combs are slightly cracked; still others which are too light to ship or to dispose of in regular channels. It is far better to sell such honey locally than to ship it away. In most instances the honey itself is exactly as good, but can not grade up and be shipped to advantage. Owing to this fact, no producer, large or small, of comb honey or of extracted, can afford to disregard the opportunity for selling honey directly from the house, advertising it by means of an inexpensive sign on a tree or post by the roadside.

* * *

HONEY MARKET AND PRICES

CONTRARY TO WHAT we had reason to hope, *comb* honey has not gone up in price. In fact, we are surprised at the number of offers and prices that are being made. It is becoming more and more apparent that there must have been a large overproduction of comb honey, in spite of our urgent and repeated appeal to beekeepers last spring to run more to extracted.

On the other hand, *liquid* honey, both for the table and for manufacturing purposes, continues firm. The large buyers are hunting for it in carlots. Exporters at New York are now trying to buy back the cheaper grades of extracted, because, as they say, they cannot find any anywhere of any quantity. Two of the large bottlers appear to be fairly well supplied. Two more are short. It is reasonably certain that extracted will remain firm; but whether the price will go still higher, however, is at present a little doubtful. The most we can hope for is that they will continue till next spring.

In the mean time the market on *comb* honey is easy, or, rather, it has a tendency to sag.

It is becoming more and more apparent that the conditions of last year were particularly favorable for the production of comb honey. As a result, a larger supply of it was produced than was ever known before in the history of the business.

The dealers and some of the large buyers are becoming disgusted with the comb-honey business. There are two reasons for this. One is the careless packing on the part of the producer and the miserable shipping-cases often used, both of which result in breakdowns and dripping honey. Of all things, broken comb honey is worse than a white elephant on the hands of the dealer. He does not know what to do with the mess, and he vows he will not buy comb honey again. The second reason is that comb honey granulates. The average dealer does not know how to take care of it, even if he does receive it in good shape. He leaves it in a room of variable temperature, with the result that half of it is granulated before New Year's day. Finally he attempts to sell it, but it comes back on his hands because it has "turned to sugar." Then in desperation he puts the product out on the sidewalk, marks it down to ten cents per box, retail, when perhaps he paid thirteen or fourteen.

Careful packing, using roomy shipping-cases with corrugated paper, and a letter of instructions to the dealer, will save a lot of this trouble. When comb honey is shipped in less than carlots it should always be put in carriers. The new Western classification will probably bar out all other comb honey.

* * *

WHY THE DEMAND FOR EXTRACTED?

THERE ARE THREE factors responsible for high prices—the heavy and continuous advertising of Airline Honey by The A. I. Root Company; the general upward trend of all food products, and the enormous quantities of the cheaper extracted honeys shipped to the nations now at war to take the place of sugar that is higher in price. There is one other factor, and that is, honey is coming to be recognized as a food, not as a luxury—a necessary food that helps to make up a balanced ration. The nations at war have discovered that their soldier boys must have something that will make energy, life, and strength; and there is nothing that will do it better than honey. Beefsteak — in fact, none of the proteins—will supply energy. Honey supplies this demand in its purest and most easily assimilable form.

The careful and discriminating housewife is already discovering the same fact. When extracted is cheaper than comb honey, pound for pound, she will take it in preference to the more expensive article which she buys in very small quantities for the table when she has company.

The numerous articles that have been published in our largest magazines on honey as a food during the past three or four years, and the continuous advertising of the Root Co., are putting extracted honey on the table as a food for every-day use.

* * *

POUND-PACKAGE ADVERTISING

SOME BEEKEEPERS in the South have done a nice business in shipping bees in combless packages to the North. Others have not been so successful, mainly because they have set their prices too low to cover cost of cage, advertising, and replacements. Numerous complaints have been received regarding the advertiser who fails to make satisfactory replacements of combless bees that have died *en route*. Some shippers contend that their prices are so low that the beekeeper ought not to expect a replacement. If the purchaser had known that the guarantee did not cover replacement he would have ordered of the other fellow. This failure to replace has caused no end of dissatisfaction, with the result that these shippers will not get very much of the trade of the coming year.

In view of the complaints that we have received, GLEANINGS has decided it will accept no advertisement from any pound-package man unless he will furnish satisfactory references, guaranteeing pure stock and safe arrival. This means that, in the event the bees are not pure or fail to come thru in good order, the shipper will make another shipment or return enough money to cover the shortage, whatever that may be. In some cases where the shortage is small he can make it up by sending a queen by mail.

On the other hand GLEANINGS believes that it is only fair for the consignee to pay express charges on the second lot of bees received; and he should also furnish a statement from the express agent certifying the condition of each shipment of bees on arrival.

A copy of this editorial will be sent to each person who seeks to advertise combless bees in these columns, and he will be asked to agree to the above conditions. Failing to comply, his advertisement will be rejected.

As a general thing the beekeeper who will furnish bees at cutrate prices, or those considerably below the average of his competitors, will be less inclined to make a satisfactory replacement. While we do not wish to dictate prices we do feel that the pound-package man should charge a price sufficient to enable him to take care of replacements. That is to say, he ought, in addition to the cost of the package and cost of bees, add at least 25 per cent to cover replacement. While the majority of shipments will go thru in good order there will be a few where the loss will be complete, and others where the loss will be only partial. During extremely hot weather shipper should allow for at least 50 per cent replacement in order to be on the safe side.

It may be expected that as a rule it will be safe to buy of the man who furnished good bees the past season. The buyer however should be careful about giving a large order to an entirely new man, especially if he offers extremely low prices. The old rule, that "the cheapest may be the dearest," applies exactly to the pound-package business.

* * *

THE NEW MONTHLY GLEANINGS

THE READER will notice some marked changes in this GLEANINGS. Besides the fact that the journal is now a monthly, its general make-up, style, and appearance are those of a magazine. The cover, as will be noted, is printed in colors. The artistic improvement in its entire typographical make-up will be apparent to every reader.

In arrangement of reading matter, editorials lead off as heretofore; but all news items that have formerly gone into this department will go under a separate head, "Just News," in the back part of the journal. Editorials will be followed by feature and special articles of some length. Next follows "From the Field of Experience." This will consist of short articles along the line of what has appeared in our columns in the past under the head of "General Correspondence." The regular departments, with several additions to their former number, follow.

The children and some old folks will doubtless be interested in "Mother Goose," by M. G. P. In the present issue it will not be difficult to see the resemblance between "Honeycomb Section" and the Humpty-Dumpty of old.

We wish to call the particular attention of our readers to the "Letters from a Beekeeper's Wife," that will run thru the entire year. They relate actual experiences; and as they are written in story form they will interest the old as well as the young—particularly that class of readers who had their ups and downs as beginners. Some domestic touches are given all thru in such a way as to give life and substance to the serial.

The departments of "Our Homes," "Health Notes," and "Temperance," by A. I. Root, appear as formerly.

The discriminating reader will not fail to notice the quality of the material of the new Gleanings. We feel that we have hardly got into full action yet as a monthly; but when we do we hope to give our readers some pleasant surprises.

Owing to the fact that the present monthly is larger than the former Gleanings, and that we had only two weeks instead of a month to get out this issue, we are a little late. We hope the quality of the product will more than make up for the slight delay.

* * *

MEETING OF THE NATIONAL

THE CONVENTION of the National Beekeepers' Association for 1917 will be held at Madison, Wis., Feb. 6, 7 and 8. Both President Jager and Secretary Millen have ambitious plans for a new National. They are hard at work on a program, and we may rest assured that no stone will be left unturned to make this meeting a big success. President Jager and his secretary are live wires, and we confidently expect this to be one of the best conventions of the season. See Convention Notes for general program and speakers.

Madison is located in a territory where there are large numbers of first-class beekeepers. Besides a large local attendance there will doubtless be representatives from other states. Gleanings urges every one of its readers who can to be present at this meeting.

Let as many of us as possible be boosters by attending the next National meeting. The editor of Gleanings will take his own advice in this case—to help boost—by being present on the 6th and 7th.

* * *

BEEKEEPING AS AN AVOCATION

AT THE IOWA convention Mr. Frank Coverdale, of Delmar, Ia., made the statement that 300 colonies of bees would bring in as large a revenue as a 160-acre farm, with a great deal less work, and on a very much smaller investment. He went on to add that nothing gave him more real pleasure than working with his bees.

At the same convention Supt. A. T. Hukill of the Waterloo schools gave expression to a similar sentiment by saying, "No investment will yield so large a return as a colony of bees. * * * I know of no occupation that brings one so close to nature. It makes a better man."

It will be remembered that Mr. Coverdale is the man who put sweet clover on the map of the United States—that is, he demonstrated that it is a commercial success for a farm alone, to say nothing about bees. He grows about 800 acres of sweet clover himself. He is one of the best stock-raisers and beekeepers in all Iowa if not in the United States. Sweet clover works well with bees, and makes it possible for him to get the very highest price in the market for his honey and his stock. Coverdale is successful in everything he undertakes.

* * *

THE NET-WEIGHT LAW QUESTION

THE VETERAN BEEKEEPER, Mr. J. W. Bittenbender, of Knoxville, Tenn., at the Iowa convention spoke on the demoralized condition of the comb-honey market. He deplored the fact that there was no uniform method of grading, and no uniform prices; that comb honey was quoted all the way from $2.25 to $3.50 a case. The practical operation of the net-weight law, he thought, had done more harm than good, and that the law ought to be revised. His remedy would be a new net-weight law and a uniform system of grading that every one would adopt.

When it comes to national legislation we can wish and wish; we can pass resolutions; but it is a difficult thing to get congress, one of the most unwieldy bodies in the world, to do something really useful. While Mr. Bittenbender has our sympathy, the net-weight law is not so bad as it might be. It has stopped the practice of mixing different weights of sections in the cases. It tends to a more uniform product on the market. While it is lived up to by some, those interested in its enforcement should report all cases of law violations.

* * *

THE REPORTS of the chain of conventions held in December are given on page 56 under the head of "Just News."

ROADSIDE MARKETING

Concrete Examples of How Honey Can be Sold Profitably from the Doorstep of the Beekeeper

By the Editor

IS roadside honey-selling — selling from the front doorstep of the beekeeper's home, if you please — profitable, practicable, and worthy the careful business attention of every honey-producer who may live in a populous part of the country?

That is the question that this article purposes to discuss and exemplify.

NEW MARKETING POSSIBILITIES

A moment's reflection reveals the fact that good roads and the ever increasing number of automobiles have made possible new methods for the marketing of a not inconsiderable part of almost every kind of farm produce. One of these new methods might be properly included in the term "roadside marketing." Along the main roads of many parts of the country, especially in the vicinity of large towns and cities, it is now common, in the summer time, to see fruit and vegetables displayed for sale, since many automobilists are glad to pay good prices for all kinds of fresh produce. Instead of the producer having to solve the problem of getting his product to the consumer, the consumer is coming after it and paying all the transportation charges himself.

That the amount of produce disposed of in this way is of considerable consequence (notably in the eastern states) is a fact known to every automobile driver in the vicinity of many of the large towns of New England and New York, and the practice of "roadside marketing" is steadily taking its way westward. This is because producers are beginning to realize that the road-traveling public is willing to buy (and buy in quantities) fresh fruit, vegetables, butter and eggs—and honey—and these things at a price practically the same as that charged by retailers in the cities.

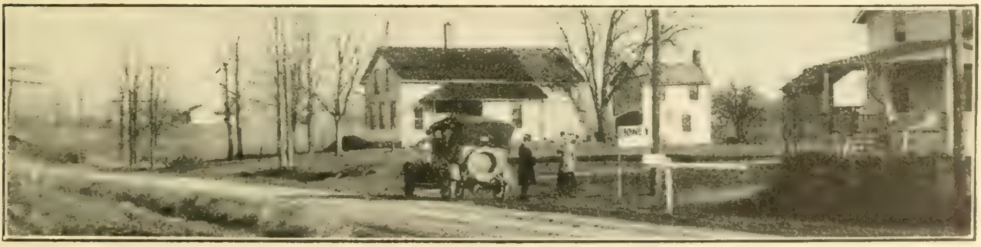
A LOT OF HONEY-FOR-SALE SIGNS

To come to the case in hand, it may be said that the honey-producers are fast coming to adopt this new marketing idea. As an evidence of this fact, on one main road leading south from Cleveland the writer counted on a single trip between Medina and Cleveland (25 miles), one day late last summer, nearly a dozen signs reading "Honey for Sale," "New Comb Honey for Sale," etc. Curiosity as to the results secured from this "shingle" advertising and roadside merchandising led us several weeks later to take this same automobile trip between our home and the city of Cleveland, with the intention of inquiring at each house where a "honey-for-sale" sign was displayed as to results and sales made. Altho only about a month had elapsed between the time when we first noted the abundance of "honey-for-sale" signs on this highway and the time when we went on our automobile trip over the same ground to secure information as to results, yet we were surprised and disappointed (for editorial reasons only) to find all but three or four of the signs removed, presumably because of the fact that the honey had all been sold.

Now let the testimony of these roadside honey-sellers be considered. It is fact and experience which is better than theory or argument.

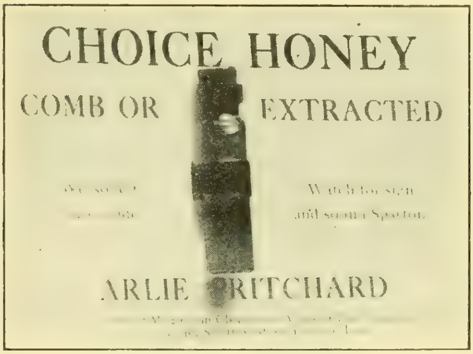
A FIRST-SEASON SUCCESS

The first beekeeper's home visited by us, and where a roadside sign announced honey for sale, was that of Arlie Pritchard, son of The A. I. Root Co.'s well-known queen-rearer, Mel T. Pritchard, living two miles north of Medina on an improved road leading directly to Cleveland, partly macadam and partly brick pavement. A picture of the premises is printed at the foot of this page. The neatness and good order of this home are made apparent by a glance at the surroundings. An apiary, with the grass cleanly cut and the hives neatly painted, standing prominently on a knoll a hundred yards from the street and a little north of



the home, formed a prominent and very pleasing part of the landscape as observable by the passerby.

Fastened and braced to a telephone-post directly in front of Mr. Pritchard's house was the roadside sign announcing the sale of honey, which read as follows: "Honey for Sale — Sound Sparton." The words "Honey for Sale" were drawn in large plain letters, readable at a considerable distance by the occupants of any approaching vehicle. The words "Sound Sparton" were written directly beneath the words "Honey for Sale," and in somewhat smaller letters, but large enough for automobilists to read on near approach. Mr. Pritchard says that the direction to "sound sparton," printed on the sign, has proved a very important part in making honey sales. It informs the automobilist that by sounding his sparton he can learn and see just what is for sale without even getting out of his machine. A sparton heard in front of the Pritchard residence brings a prompt response from some member of the family ready to show honey wares. Many an automobile traveler has bought honey at this place who would not have done so had it not been possible to open negotiations by merely sounding the automobile's horn.



CHOICE HONEY

COMB OR EXTRACTED

Watch for sign
and sound Sparton

ARLIE PRITCHARD

A crackerjack business card.

The picture in the lower right-hand corner of the accompanying page (showing various honey-signs) is from a photograph of the Pritchard roadside honey-sign. Observe how plainly and largely the words "Honey for Sale" are printed (and this was done by hand by Mr. Pritchard himself), and note further how easily and efficiently the sign was placed by attaching it to a telephone-pole directly beside the roadway.

HOW ONE MAN DID IT.

With this mental picture of the premises and the honey-sign in mind, let Mr. Pritchard tell his own story of "roadside" honey-selling.

"We put the honey-sign up on October 11," said Mr. Pritchard. "making the lettering of the sign conspicuous, and its position at the roadside conspicuous too. The possibilities in roadside selling of honey were called to our attention by the fact that travelers, attracted by our apiary in plain view at the rear of our house, frequently called and asked if we had honey for sale. So it occurred to me that if we should display a sign announcing honey for sale it would increase the number of prospective purchasers calling, and perhaps develop quite a business. You see, it was the hives in plain sight that first led a considerable number of travelers to stop and call at the house for honey which resulted in our beginning roadside honey-selling. So, I would first emphasize the great importance of having a neat-looking apiary in plain view of the road.

"No sooner had we put the sign up at the roadside than the number of callers at the house asking for honey increased tremendously. Today is December 11—just two months since we put the roadside sign up—and we have sold at our door 3000 pounds of extracted honey and nearly 20 cases of comb honey. This has all been done, too, with no loss of time from regular work. Odd moments have served to do the work connected with the selling. Experience has taught us some things about selling in briefer time and with less work than at first. One simple time-saving and labor-saving device is this: A tray for carrying honey to the roadside, the bottom of which was made from a cheese-box cover, having a half barrel-hoop nailed to this for a handle. This tray has served to carry all sizes of honey jars and pails (except the very largest) to the roadside, and so give the prospective customer full knowledge at first sight of just what we had to sell.

QUALITY AND PRICES.

"The comb honey that we have sold would be graded as 'Choice' and not 'Extra fancy' nor 'Fancy,' but all of first-class table quality. The extracted honey that we have sold was all of the very best quality.

"The price we got for comb honey was uniformly 20 cents a section, generally weighing about 11 or 12 ounces. For extracted we got 20 cents for a one-pound jar; 35 cents for a two-pound jar; 50 cents for a three-pound jar; 75 cents for a five-pound jar; 90 cents for a six-pound jar; $1.40 for a ten-pound pail, we furnishing the pail of course.

ONEY
HONEY FOR SALE
HONEY FOR SALE
HONEY
FOR SALE

IMPORTANCE OF THE PACKAGE.

"Right here something should be said about the importance of appearance and the containers in which you offer honey for sale to travelers. The traveler who visits your home for the first time to buy honey, and who is ignorant of honey conditions (as the public generally is) is suspicious as to the quality and purity of all honey. For this reason he wants to see the honey that he is to buy before he buys it. Therefore they prefer honey in glass jars—at first, any way. So my one-pound package is a round glass jar. At first I sold two-pound and three-pound packages in tin pails, but later I cut out both of these tin packages, as my experience taught me that customers did not wish to buy honey in these amounts out of sight and unseen. I now sell three pounds in a quart Mason jar. I sell five pounds in a friction-top tin pail, but this is because I can not secure any five-pound glass container. The six-pound package is a two-quart Mason jar. The largest package I sell, ten pounds, is contained in a friction-top pail. A good many people ask me why I have such a variety of packages and of so many different sizes. I think it is necessary to have this variety in order best to satisfy customers and sell the most honey. But if I were to have but one package it would be the three-pound Mason glass jar. I have found this the most popular, and sell the most of them. But just to show that people will take something else than what they exactly want in the honey line, I remember that one day I sold nine ten-pound pails to customers, most of whom wanted a five or six pound package of honey, neither of which I chanced to have on that particular day.

"What I would emphasize most of all about honey-packages is that customers want to see their honey before buying, and so the glass package is preferable to the tin in almost every instance.

"Right here, in connection with packages, perhaps comes in the question of the label used by me. I use an ordinary printer's stock label in which a blank is left for the name of the honey-seller, and I write my name on such label by hand. The label is neatly printed in colors, and I write on it the size, my name, and the net weight of the package.

THE MOST IMPORTANT SALES FACTOR.

"If you ask me what is the most important factor in selling honey at one's home, I hardly know how to answer you. The apiary, a hundred yards northeast of my home, and in plain sight from the road for a considerable distance either way, probably first attracts the attention of most passersby. The honey-sign directly in front of the house, and close up to the roadside, probably stops most of the prospective buyers. But you have not yet sold to the man who has both seen your apiary and has stopped in front of your house to inquire about the purchase of honey. You have not got your money yet. But there are certain considerations that have a lot to do with inducing the prospective customer to become a buyer. Almost invariably he is curious about bees and will inquire about the apiary in sight and ask all kinds of questions in general about bees. Accordingly, it is very essential that the honey-seller be a practical and well-versed beeman so that he can answer such questions. Just as soon as the prospective buyer sees that the seller is a beeman and can answer his questions he concludes that he is a real honey-producer, and that his honey must be all right. I have known as high as half a dozen autos to be standing in front of my home at one time while their occupants were crowded about me asking questions of all sorts about bees and honey. On Sundays especially I seem sometimes to be conducting a regular educational institution on bees. I remember once selling $7.00 worth of honey to the occupants of five machines which stopped at one time at my house, and this sale came after I had answered a whole battery of questions from these people about honey and about bees. So I will say that a thoro knowledge of bees and a knack of telling this knowledge to your prospective customers is a very important factor in selling honey at the roadside.

A FRONT-PORCH HONEY DISPLAY HELPS

"I have found another very great aid to selling honey at home is a display of honey placed on a table on the front porch where it can be easily seen from the road. I make up such a honey display and place it on my front porch, especially on holidays or other days when a specially large number of automobilists are likely to be passing our way. This front-porch display is a decided help in securing customers.

UNIQUE BUSINESS CARD.

"Another thing that has helped to bring me customers, I think, is the rather unique business card that I give to all my customers and to all my prospective customers. It is printed on a good quality of cardboard, two and a half by four inches. The unique and striking feature of this business card is a tiny bottle of extracted honey fastened at the middle of it. This tiny bottle is only a little more than an inch in length, and fastened to the card by a small tin band, the ends of which band are made to pierce the card until it binds the bottle fast, and then the ends of this tin band are turned and flattened against the back of the card, thus securely holding the bottle. At the top of the card is printed "Choice Honey, Comb or Extracted." At one side of the bottle is printed "We solicit auto trade." At the other side of the bottle is printed Watch for Sign, and Sound Sparton. At the foot of the card I have my name and location printed. The presentation of this card always excites an expression of pleasure and surprise. I think it is a very effective business-getter.

WHAT CLASS OF CUSTOMERS.

"If you ask me what class of people constitute the largest part of my honey customers, I hardly know how to answer. Very little of our honey trade is local. The very large majority of all our customers come to our door by auto, and a majority of the machines that stop there are Fords. This would indicate that a majority of our customers, then, are not of the wealthiest class. I should say that this majority is made up of the well-to-do middle class of people, such as ordinarily can afford to own and run a Ford auto. However, I know that some of our customers are of the wealthy class, and they arrive at our place in high-priced autos.

"Most of our customers are residents of Cleveland. Even within the period of two months that we have had our roadside honey-sign displayed, we have learned that many of our first-time customers return to us for second and third orders of honey. I recall one man who has come from Cleveland several times for the sole purpose of purchasing honey at our place, and has purchased in all more than 150 pounds. He buys in quantities of ten-pound pails. I have found that several of our customers purchase for neighbors and friends whom they have told of their own buying of honey at our place. I recall now one lineman for the Ohio Telephone Company whose work brings him to the line passing my home, who has bought as much as $10.00 worth of honey at one time, most of it for his fellow workmen employed at the telephone company's headquarters. As indicating how readily honey may be sold to those who have an opportunity of buying it, I recall that a number of the motormen and conductors on the electric railway which passes my home have become steady buyers of my honey. In fact, my observation is that people of all classes like honey, and are ready and glad to buy it if it is brought to their attention and made convenient for them to purchase. My reason for saying this is, as before intimated, that my customers come from all classes of people.

THE BEST SALES DAY

"On what days do I sell the most honey? Well, I sell the most honey on the days that the largest number of automobiles pass my home. I should say that Sunday, as a rule, is the day when we have the most calls. Any holiday, because of the large number of automobiles out in the country on holidays, are excellent honey-sales days. Saturdays are also good sales days. Any day when there are a lot of autos on the road is a good day to sell honey at my place.

WHO WAITS ON TRADE.

"Who waits on the trade, do you ask? Either myself or my wife; and if neither one of us is at home, why, of course trade is not waited on. But one or the other of us is almost always at home; and as we both know the prices and about what our customers will ask and what they want, one can wait on the trade as well as the other. It is not hard to make a sale—just know the different prices of the various packages, and be able to answer the curious questions of your possible customers, and you will be able to sell all right."

CHIEF FACTORS IN SUCCESS.

When Mr. Pritchard was asked to sum up the most important factors in roadside honey-selling, in the order of their importance, he said something like this: "Have your plainly printed honey-sale sign directly by the roadside, and don't forget the 'Sound Sparton' part of this sign; have your apiary in plain sight of the road, and have it in the neatest and most attractive possible condition; know how to answer the curious questions of your customers concerning bees and honey—it makes them your friend and leads them to have confidence in you and to come again. Don't forget the front-porch display and an attractive business card. Make your honey-packages of glass rather than tin, because your customers will want to see the honey rather than to take your word for it. When a Sparton is sounded, respond promptly."

SELLING ON A SIDE ROAD.

On this same improved main thorofare leading south from Cleveland on which Mr. Pritchard lives, but at a point two miles south of Medina, another "Honey for Sale" sign was displayed, being put up about

August 1. It was a rather crude, hand-painted sign, put up at a cross-road corner, an unimproved dirt road running east and west crossing the main north-and-south thorofare at this point. The sign read "Honey for Sale," and after it was an arrow pointing down the side road to the west. The fact was, that the house where the honey was for sale was three-quarters of a mile west of the main improved road and on an unimproved dirt road.

When the editor called at this house to learn the results of roadside marketing of honey the mother of the young man who produced the honey answered his inquiry. She said that the honey-sale sign had been put up at the corners of the road "just to try it out." Within a month the entire product of her son's thirty colonies of bees had been sold from the house. This amounted to about 1000 sections of comb honey and some 50 gallons of extracted, all of very fine quality. No porch display of honey was made at the house, and an attractive apiary was not in sight from the road. The honey had been sold largely to neighbors within a radius of several miles, altho some automobilists had left the main road three-quarters of a mile distant and come to the house to buy. One such, a banker living about twenty-five miles distant, had come to the place several times to buy more and more honey. No attempt had been made to make fancy or attractive packages for the honey. The comb-honey sections, when sold, were merely wrapped in paper, and the extracted honey was sold in quart Mason jars, and no labels were used. No particular days were noted as best sales days on the side road, showing that the autos did not cut the largest figure in the 18 cents for the pound comb sections and sales at this home. The price secured was $1.35 a gallon for the extracted, the cans furnished by the seller. It was stated that a better price could have been secured.

When the lady of the house was asked what part the roadside sign had had in bringing about the sales of this entire crop of honey she said emphatically: "Yes, the sign did it entirely. We did nothing to sell it except to put up this sign." And it was a crude one too.

A BOY'S ROADSIDE SUCCESS

Five miles south of the city limits of Cleveland, still on this main thorofare on which Mr. Pritchard lives, and on which Medina is located, is another home where a roadside honey-sale sign was displayed. The picture of the home and the honey-sale sign on the telephone pole in front of the residence are shown at the center of the accompanying page whereon various honey-signs are pictured. Here a fifteen-year-old school boy was conducting the roadside honey market. Robinson Newcomb is his name, and he is strictly business and enterprise from the bottom of his feet to the last hair at the top of his head. When asked by the editor to tell about his experiences in selling honey from the door of his parents' home he said in brief:

"I put up the sign beside the road in early August, because I had seen this aid to selling mentioned in GLEANINGS. I have only nine colonies of bees, and had sold all my honey within a month, and, in fact, had bought some of another man several miles away to supply the trade that continued after my own honey had all been sold. I sold my comb-honey sections in cartons and my extracted in glass jars, using a label. I got 25 cents a section for comb honey and $1.50 a gallon for the extracted honey. I also sold a six-pound package of extracted for $1.00. In all I have sold about 20 cases of comb honey and 185 pounds of extracted. I can not say that my honey was all of the best quality nor of fancy grade—in fact, I sold what would be graded as second-class, but just as good for eating purposes as any. I had much the largest call for comb honey. I would say that the class of people who bought honey from me was the 'Winton-Six class.' By this I mean my customers were evidently wealthy people. The roadside sign did mighty well for me, but I can tell you I am going to have a bigger sign next year and more honey."

It is worth mentioning that this bright keen-eyed boy had had the enterprise to foot it crosslots to a neighbor and purchase honey from him which he resold at his home at a good advance in price. This was young Newcomb's first year's experience in keeping bees; and one of the most striking innovations that he had made in his apiculture was to secure large sheet-iron or tin beer-signs that he had torn down wherever he could find them in his vicinity and placed these over the tops of his hives as winter covers. He considered this use of these beer-signs as an improvement on their original function, and promised more forays on them.

OLD PEOPLE'S ROADSIDE SELLING.

Living at about the same distance from Cleveland city limits as does the Newcomb boy, and on a brick-paved road leading off the main thorofare south from the city, lives another roadside honey-seller whose sign is nailed to an oak-tree standing in front of his residence close beside the pavement. It is shown in the upper right-hand corner of the accompanying page of honey-sign illustrations. It is an aged but worthy German couple who produce honey here from about twenty colonies of bees, and their advanced years have somewhat debilitated them and perhaps robbed them of some of the ambition of earlier years. As the aged man said: "We don't bother ourselves much." In fact, no apiary was in sight, and the appearance of the premises was not as neat as it might have been. The sign at the roadside had been put up from year to year, and bees have been kept by the proprietor for many years. This roadside honey sign is ordinarily put up when the first crop of honey is taken off and is kept up till this honey is sold. The sign is put up a second time when the second crop of honey is taken off—if the elderly people have time to attend to the selling of it. It is to be remembered "We don't bother ourselves." The sales here are accordingly rather slow, but apparently sure. Only comb honey is produced and sold by the aged couple.

Speaking of his honey-selling experiences, the aged beekeeper of this home said: "Until within a very few years there was only a dirt road past my house, and I couldn't sell all of my honey from my door then. So I would sell some of it to the stores and some of it to neighboring farmers and friends. But since the road past here has been paved I have had enough automobile customers to buy all the honey I have and more. We don't use any cartons, but just wrap up the comb-honey sections in paper and pass them out to our customers. I find that I sell more on Sundays than on any other day, and more during the evening than during the day time. The price I got last summer was 18 cents a section; but just lately I put the price up to 20 cents a section. Occasionally a section will have a little pollen in it, and I sell such a one for 15 cents. The cull and light-weight sections I sell at less than the regular price. It pays to be honest in selling honey, just as in every other business. I find people will come back to buy of you a second time if you have told them the exact truth about what you have to sell. But the sign out there by the side of the road sells our honey—we don't do very much about it except to put that sign up when we have honey to sell and when we have time to sell it."

A STRIKING ROADSIDE SIGN.

In the upper left-hand corner of the accompanying page illustrating honey-selling signs there will be noticed a picture of such a sign made by painting the word honey in large letters on a white-painted hive. This, displayed by the roadside, makes a striking honey-selling sign. While the editor could not learn the details of the honey-selling done at the residence where this sign was displayed, yet he did learn that this sign led to the sale of all the honey produced in a moderate-sized apiary within a few days after the hive sign had been displayed at the roadside. This was on the same main thorofare leading south from Cleveland that has been mentioned repeatedly before in this article.

AN INDIANA BOY'S SUCCESS.

Adding to his testimony given to the editor on his automobile trip over the road and country previously described in this article, we wish to add the testimony of a young beekeeper, Chester Bundy, of Converse, Ind. The picture of his roadside honey-sign is to be found at the lower left-hand corner of the accompanying page illustrating roadside honey-signs. Mr. Bundy's testimony is right to the point when he says:

"I am sending you a post-card picture of my honey-advertising device. I got the cue for it from the advertising number of GLEANINGS in which Dr. Bonney and others tell about their experience. My sign helped to dispose of more than a thousand pounds of comb honey. Our road is a much-traveled one, and people from five to twenty miles around come and buy honey for themselves and for their friends."

Such is the testimony of the roadside honey-sellers of this vicinity as to the efficacy of the roadside honey-sign, the apiary in full sight of the road, the neatness of the premises about the honey-seller's home, the good results of knowing and telling of bees to prospective customers, the right size and kind of packages, and strict honesty of deals. This testimony from the experience of those interviewed by the editor of GLEANINGS points its own lessons without further comment. It points out one of the very best methods of selling the honey crop in populous communities, and especially for the small producer of honey. The efficacy of this roadside selling in sparsely settled communities and off improved roads may be uncertain and perhaps not feasible. But for the beekeeper in populous communities and near large towns it certainly points out the road to larger and quicker profit.

OUT-APIARY MANAGEMENT

Something to Do Every Month in the Year, and What That Something Is

Edgar Williams

In the fall of 1915 I had 500 colonies in six yards. Mr. Waters who helped me had another yard, of 100 colonies. Counting the increase we now have nearly 700 colonies. We do practically all the work, altho whenever we have a large crop of honey we have to have some help. Four years ago we produced $2500 worth of honey from 200 colonies; the year following, $3600 worth from a little more than 300. The season of 1914 was the poorest I have seen since I kept bees. There was no early honey and the crop was light, so that we sold only $1200 worth from 333 colonies. The year 1915 was also poor; but we did better, selling $2200 worth from 400 colonies. In 1916 the crop will bring at least $4500 from about 425 colonies, besides making up winter loss and increasing to a total of 550 colonies. The above figures include only my own bees. Mr. Waters has sold, the present year, over $800 from his. We aim to keep busy thruout the year. The following is a brief outline of our work in the different months.

JANUARY

Two or three weeks of this month are spent in working wax. I think every beekeeper who has 100 colonies or more should make his own foundation. We make, besides our own, quite a quantity for other beekeepers. We dip the surplus sheets as wide as the brood, and also make them heavy. After running thru smooth rolls the sheet is large enough to make six standard sheets, three long and two wide. This is run just as it is thru the foundation-mill and then trimmed. In this way we save time over the plan of running one small sheet thru at a time. At present we use a brood mill, but we are thinking of getting one especially for surplus foundation.

Our brood foundation is made in the same way; but the original sheets being heavier are long enough for only two sheets instead of three. Therefore there are four to a sheet. We use warm water when running the original sheets thru the smooth rolls, but nearly ice-cold water, also plenty of soapsuds, when they go thru the foundation-mill, as the sheets handle better and do not stick as much. We make the surplus foundation 32 to 36 sheets per pound, and the brood 10 sheets a pound. We do not have to paper the foundation in piling it up, therefore we can make it a little lighter than the standard. The home-made foundation does not look as nice as the factory-made; but we like it fully as well for the bees accept it readily and it goes further. After the sheets are dipped it is no trick for two men to run and trim 60 to 70 pounds in eight hours.

FEBRUARY

The greater part of this month is devoted to nailing hives and supers. As we are constantly increasing our bees we have had a great deal of this work to do. Most of our colonies are in specially made chaff hives. The covers are of thin material, but the outside wall of the hive as well as the bottom-board is made of ⅞ material. I do not like loose-bottom double-walled hives. Ours are made like the old style with tight bottoms. We think the bees winter better in them, and the hives are much handier when it comes to moving. By our system, moreover, there is seldom any need for a loose bottom or floor-board. With double-walled hives it is an easy matter to fix the bees for winter. We simply put on the chaff trays (baled planer-shavings for packing) and contract the entrances.

Our supers are also special. They take seven wide frames that hang in rabbets like brood-frames, each holding four sections 4¼ square by 1⅞ inches, or 28 in all. For separators we use strips of tin 3½ by 17¾ tacked on the back of each wide frame. I much perfer this kind of super. I have some T and P supers which I am trying to sell. With our supers we do not have to take off a whole super at a time. We can remove 4, 8, 12, 16, or 20 sections if we like, as I shall explain more fully later.

When nailing the brood-frames we leave one of the lower corners unnailed with the end-bar shoved in about half an inch. After the wire is threaded thru the holes and fastened we take hold of the end-bar, force it back into position and nail it, thus drawing the wires taut. We use this same plan for tacking the separator tins on the wide frames that hold the sections.

During the latter part of February we commence cleaning our supers and filling them with sections and foundation.

MARCH

Many beekeepers fill their section-holders with sections and then insert the foundation. We do just the opposite, altho I am not saying that our plan is any better. We fasten our foundation by dipping the edge of the starter in melted wax and rosin. To support the pan of wax and rosin over the lamp we make use of a box about two feet in height with the front open. In the top we cut a hole about eight inches in diameter and over this tack a piece of tin with a hole in the center of it just right to receive the tin basin or pan used to hold the wax and rosin. This box is supported so that the top holding the pan will be flush with the top of the bench. Inside the box we place an oil-lamp with the chimney on. A No. 3 burner is best, as it takes considerable heat.

We use two parts of rosin to one of wax. A little rosin shows on the edge of the sections; but of all the honey we have sold we have never had complaint on this account.

We take 100 sections, fold one, touch the edge of the starter to the rosin and wax, insert it in the center of the section, and the job is done. One man can dampen, fold, and starter 2000 sections in a day, and the starter will actually tear apart before it will drop out. Strength is a necessity where the supers have to be hauled to out-yards.

We pile up the sections having the starters in, and super-covers, no queen-excluders. When we have 3000 or 4000 ready we commence cleaning supers and racks and inserting the sections.

We nearly always put 4 to 10 bait sections in the center of half or two-thirds of the supers, the idea being that these are to be placed on the hives first.

As yet the bees have not been looked at since they were packed in November. During the warm days which usually come during the latter part of March we go over each of the yards and see that the entrances are clear. If each colony had plenty of honey the fall previous we do not make an examination as to stores on this visit.

APRIL

After the bees have had several cleansing flights we make a trip over the yard, lifting off the cover and tray, then raising the super-cover and blowing a little smoke under. If the colony is strong, and if there is plenty of honey to last until May, we leave it alone. If it is weak we contract the entrance. If we notice a queenless "hum" we investigate; and if we discover that the colony is really queenless we unite some other weak colony with the queenless colony. If any colonies are short of stores we supply a comb or two of sealed honey. If any colonies are extremely weak, but still contain good queens, we reserve such queens for replacing poor queens in other colonies.

In April we plan to paint all the new hives and supers, also to repaint the hives at one out-apiary every year. We usually paint the hives white, but now and then we use red, yellow, blue, etc. I like the contrast, and I think it helps the bees in locating their own hive. During this month we also nail our shipping-cases, and make the carriers if we have time.

MAY

From May until November is our busiest time. We aim to do four things during May: Clip the queens, spread brood, supply necessary honey, and look for possible disease. We usually get our six yards looked over three different times during this month.

On our first trip we find the queen in every colony, see that she is clipped, and mark her age on the hive. We also make sure that there is plenty of honey. A normal colony will usually have brood in four or five combs at this time, and we slip an outside comb of brood or both outside combs into the middle, thus spreading the brood. In case of colonies that are weak we give a comb of hatching brood and young bees taken from some strong colony.

The second time around we look after the supply of honey again. This time we put a comb of honey, first breaking the capping, in the center of the brood-nest.

On the last round if we run out of combs of honey saved over from the previous fall we feed sugar. We have never done very much feeding of sugar, however. If any colony shows disease we mark it for treatment in June. At this time we again spread the brood with one or possibly two combs in the center, and supply weak colonies with more brood from the strong ones. In spreading brood there is no general rule that can be followed. Some colonies will not stand any spreading, while others will need more than the average.

JUNE

In this locality the clover-honey flow usually commences about the middle of June. However, in the fore part of the month we begin putting on supers. We put two supers, each containing bait sections, on the strong colonies, and one on the weaker colonies. At the home yard a few are run for extracted honey. These, of course, receive extracting-supers. During the swarming season we plan to go over the yards every eight or ten days.

During the fore part of June we kill all hybrid queens over one year old, and also practically all queens that will soon be three years old. On the next trip we cut out all cells started in hybrid colonies and supply such colonies with cells from one of the hives containing an old queen also killed on the previous trip. On this trip we destroy all cells but one in the hives that had contained these three-year-old queens. In this way we eliminate swarming in at least a third of the colonies in each yard.

About June 20 we commence making increase to atone for the winter losses. All of our hives face the south. In case of colonies preparing to swarm, a new hive with full sheets of foundation or combs is placed on the old stand, the old hive being set to one side, facing the north. The queen and frame of brood is taken out of the old hive and placed in the new one on the old stand, the extra frame from the hive being put in the old hive. At the next trip, eight or ten days later, the old hive is taken away to an entirely new stand, after first shaking the bees from four or five frames in front of the new hive on the old stand. (Combs with cells on them should not be shaken.) In this way the old colony has just enough bees so that the brood will not chill. The supers, of course, were put on the new hive on the old stand at the time the division was made.

This is the most satisfactory way of making increase that I have ever tried. The old colony gives a good account of itself on the clover flow.

JULY

After the first of July nothing is done toward stopping swarming but cutting out queen-cells. As swarming is usually over in this locality by the 10th, this plan is nearly always sufficient. A few may swarm out now and then; but aside from a little mixing up no harm seems to result.

The honey-flow generally lasts until about the 20th. If it is a good flow more supers are added on each trip.

As soon as a wide frame of four sections is found sealed it is removed. About the 25th we commence taking off all the clover honey. We go to a yard with a wagon and blankets and an empty super. We go to a hive, take out all the frames that have any sections that are capped, or partly so. It is not necessary to haul the empty sections home. We leave them on and fill in with others if there are not enough to complete a super. This leaves a super on each hive with some half-built combs to start the bees on buckwheat. As fast as the finished honey is taken off we give each frame a good shake, thus dislodging the bees, and place it in a super and then wheel or carry the super to the wagon. A few bees will be carried home, but not many. The few that are left on the honey usually take wing when the blankets are raised during the loading of the honey.

To avoid robbers it is a good plan to have two men, one to take off the honey and shake, and the other to carry it to the wagon and load. No hive should be kept open a minute longer than necessary. If robbers get started in one place we go to another part of the apiary, keeping the honey tightly covered on the wagon all of the time. Shaking bees off from only four sections at a time may seem slow work, but it is not. Two men will "strip" a yard a day.

AUGUST

We aim to have the early honey taken off, scraped, packed, and shipped by the 15th of the month. We make two grades. No. 1 is the grade that we ship, and the No. 2, consisting of the sections not fully capped over, which we sell around home. Sections that are too light for the second grade we extract. After this we prepare more sections and refill the supers.

About the 15th we again run over the yard. In fact, we do this every ten days until about the middle of September, because there is often considerable swarming during the fall honey-flow. We do nothing to prevent the swarming except to keep the cells cut out every ten days, and make sure that all laying queens are clipped. The swarming fever is more easily broken up at this time of the year than earlier during the clover flow.

At the August 15th visit we clip all queens in our new colonies, and also in the colonies requeened early in June. Supers are put on the new divisions, also another on the old colonies if the bees are storing rapidly. At the next one or two visits we simply give more room if necessary and look the combs over for cells.

SEPTEMBER

The work during this month is a good deal like that in July. At the visits during the fore part of the month we supply more room and haul home any frames of sections that are finished. About the 25th the flow from buckwheat and goldenrod is over, and we therefore remove all the honey. We work just as we do in July, except at this time all sections are taken off. About this time we also bring along the chaff trays and the entrance-blocks and put them on.

OCTOBER

This is a busy month, for we scrape, scrape, all day long.

NOVEMBER

We are usually thru with the honey by the first week of this month, then we extract the unfinished sections, strain the honey into a tank, stir it for a day or so, then run it out into paper sacks to granulate. We have a good call for granulated honey in sacks. We think the stirring a great help as it makes a finer grain. It is called " butter honey " here.

As was previously mentioned, some of the colonies in the home yard are run for extracted honey. All the honey that they produce from the fall flow is saved and set away for spring feeding.

During the latter part of the month we again look over the yard. There are a few of the colonies in single-walled hives, having deep telescoping covers. These are well wrapped in newspapers, and the covers slipped down over the whole. The colonies winter quite well so protected, but not as well as they do in the double-walled hives. Before leaving the yard we see that the covers are tight, and that the front of every hive is lower than the back.

DECEMBER

This is our easiest month. We take a few holidays, straighten up the bee-house, putting things to rights and getting ready for the winter work. Any poor combs that have been culled out during the summer, and all scrapings, are rendered into wax ready for the work in January.

Pierpont, Ohio.

HAWAIIAN ALGAROBA

A Prolific, Rapid-growing Tree of Great Importance to Stock-growers and Beekeepers of the Pacific

Leslie Burr

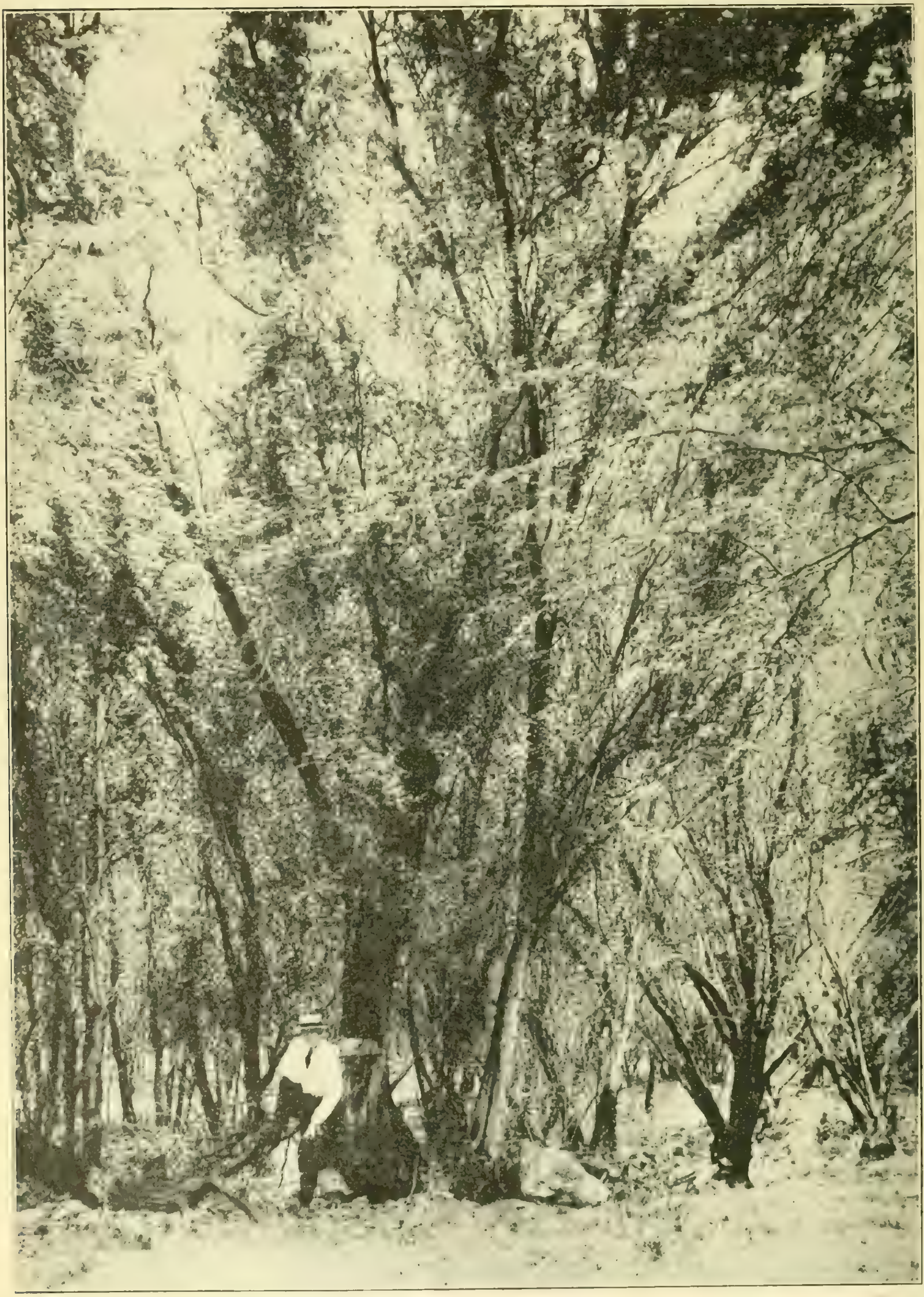
SOMEWHERE in the past, perhaps about a century ago; the place, no doubt, a mission located in the Americas between the tropic of Cancer and the tropic of Capricorn, a black-robed priest was making a study of the trees and plants indigenous to the soil. And particularly did he become interested in a certain acacia-like tree. The trunk of this tree was not beautiful; in fact, it might be classed as ugly. But the tree had many good features that offset the ill appearance, among which were that the seeds germinated freely, and that the young trees were sturdy and capable of taking care of themselves, and grew in almost any kind of soil. In fact, it seemed to matter little where the tree found a foothold, whether on low coastal land or high arid plains where the altitude was reckoned by thousands of feet. Then, too, the wood of the tree was good firewood, and did not rot when placed in earth or water. The foliage was pleasing to the eye, and the blossoms that the trees bore during two distinct periods of bloom were sweet-scented, and yielded nectar abundantly. The honey gathered by the bees from the blossoms was very light in color, and of good flavor. The fruit was fleshy gray, or golden pods from five to nine inches long. These pods when ripe furnished food for both man and beast. Cattle were especially fond of the pods, and thrived on them. Another feature of the trees was that the roots, which would go, when necessary, great depths for water, did not impair the fertility of the surface soil; and as the bipinnated leaves let the sunshine filter thru, the grass, unless the trees grew in dense thickets, grew beneath the trees almost as freely and as luxuriantly as in the open.

A quantity of the seed of this tree was gathered by the priest, and either taken or sent to France, and eventually found its way to the Jardin du Roi de Paris. Just who the priest was that gathered the seed; just where the trees grew, or the exact manner in which the seed found its way to France is unknown, the true and exact facts having been lost or obscured in the dusty corridors of time. All that seems to be actually known is that Father Bachelot was given the seed at the Jardin du Roi de Paris, and that he took it to the Hawaiian Islands about the year 1828; that he planted the seeds, and that at least one seed grew. The tree from that seed still stands.

BOTANICAL DESCRIPTION

This is the tree now known as the Hawaiian algaroba, *Prosopis juliflora* being the botanical name. " Prosopis " means " obscure," and " juliflora " means " catkin-like flower." The tree belongs to the natural order *Leguminosae* (sub-order *mimoseae*).

It is claimed that there are eighteen or more species of the *prosopis,* all tropical



Algaroba trees. These trees are growing on what is practically solid coral rock. The surface is hard, but underneath the rock it is comparatively soft. There is practically no soil on the surface.

or semi-tropical plants, and are found in the country lying south from southern Texas to Chile, the mesquite of Texas being one of the number.

The size and height of the Hawaiian tree depend on conditions. If conditions are favorable the tree reaches a height of forty-five or fifty feet, and the trunk a diameter of two feet or more. In Hawaii the tree grows very rapidly, in that respect surpassing the eucalypti that have been introduced into Hawaii. As to the periods of bloom, in Hawaii the first bloom commences in May and the last generally ends some time about the first of October.

ALGAROBA WOOD AS FUEL

Algaroba is the chief source of fuel in the territory of Hawaii. It also makes excellent charcoal. In addition to being valuable as fuel, the tree furnishes a gum suitable for use in varnish, and the bark contains tannin. Then, too, the tree being a legume, it is a soil-maker of some importance. The wood is also suitable for short-length piles, as the wood is relatively free from attack of the toredo, the great enemy of wood that is submerged in salt water.

WHERE ALGAROBA WILL GROW

The algaroba is an evergreen tropical or semi-tropical tree, and there is no reason to suppose that it would be possible for it to grow further north than does its sister, the *mesquite* of Texas and Mexico.

SOIL WHERE ALGAROBA WILL GROW

It is found along the coasts of most of the Hawaiian Islands, and thousands of acres are growing on the sea-level. In some places the waves splash on the foliage, so near to the sea does it grow. But the tree seems to do best at a slight elevation, and no doubt it will grow at any elevation where the mesquite will grow. At the present time I think that about 2000 feet is as high an elevation as the tree has reached. All that the tree seems to want is a place to find a foothold, a little soil, and some moisture. As the Hawaiian Islands are all of recent volcanic origin, the kinds of soil here are limited, which likewise limits observation as to what soil is best for the tree.

As to climate, a semi-arid climate seems to suit the tree best; but, as in the case with soil and with altitude, the algaroba is not very partial, and seems willing to accommodate itself to conditions.

EXTENT OF ALGAROBA FORESTS IN THE HAWAIIAN ISLANDS

On the lee side of practically all of the islands there are enormous forests of algaroba, the forests extending from the seashore to an altitude of a thousand feet or so. As most of those who read this are not personally acquainted with the Hawaiian Islands, a word of explanation concerning the so-called lee side of the islands will not be out of place. The reason for there being a lee side is the trade-winds. These are easterly winds that blow, with but few exceptions, during the entire year. The easterly side of the islands is, therefore, spoken of as the windward side, and the westerly side as the lee side. The trade-winds cause an entire change of climate to exist on the opposite sides of the islands, even tho the island is but a few miles across. On the windward sides there is a heavy rainfall, some places in excess of 200 inches for the year, and at times it reaches 400. On the lee side there is less rain, in some instances being an almost total lack of rainfall, causing deserts to exist in some places. It is where the heavy rainfall exists that the algaroba does not thrive, or is entirely lacking.

ALGAROBA AS A HONEY-PLANT

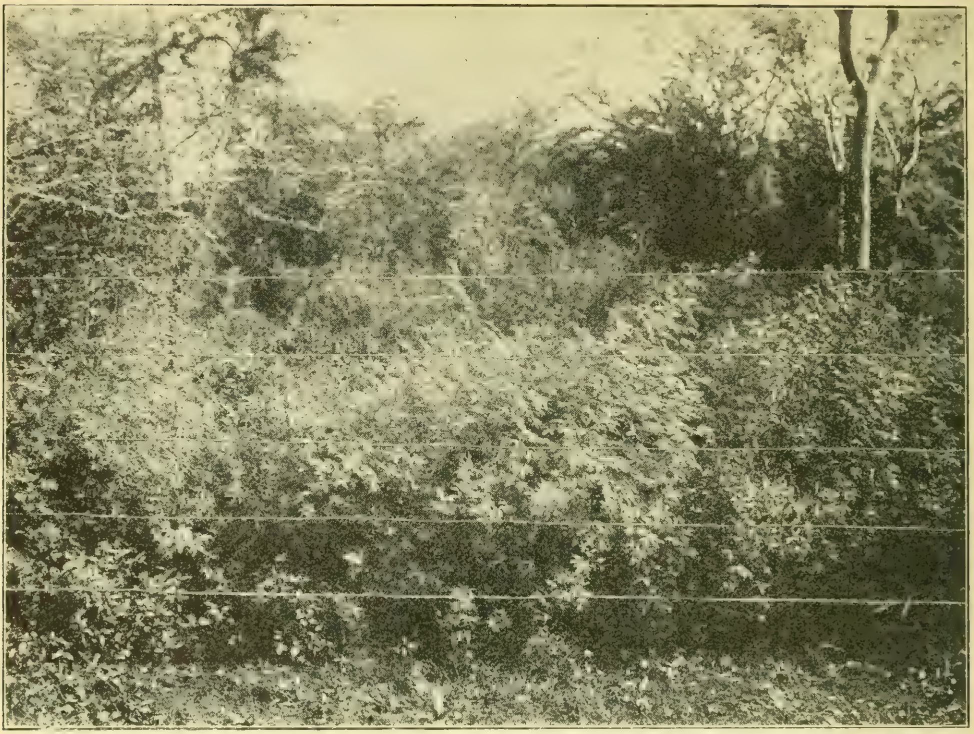
Algaroba is the only good floral honey that the Hawaiian Islands produce to any extent. In color the honey is almost water-white, and has about the same body as white clover. The flavor, aside from being good, is distinctive, and no doubt the public, wherever the honey is sold, acquire a preference for it the same as with alfalfa, sage, white clover, etc.

ANALYSIS OF ALGAROBA HONEY

As is well known, most of the Hawaiian honey is not normal. As is shown by Bulletin No. 17, "Hawaiian Honeys," by the Hawaii Agricultural Experiment Station, the honey from the algaroba is the nearest normal. Its only difference from normal honey is in the matter of having a high ash content. The ash in algaroba honey varies between 0.44 and 0.59 per cent, while, according to the official standard, pure honey should not exceed 0.25 per cent of ash.

WHAT PROPORTION OF HAWAIIAN HONEY IS ALGAROBA

According to the last-mentioned bulletin, in 1906 the Hawaiian Islands produced a total crop of about 600 tons of honey. Of this amount some 200 tons was from algaroba. Since 1906 there has been considerable advance in the number of bees in Hawaii, and I suppose an increase in the amount of honey; but just what percentage of the honey during the past few years has been from algaroba I have not been able to ascertain definitely. Some claim that it is now half. This may be true, as



One of Mr. Gilbert's pig-fences. The small trees just back of the fence are small algaroba-trees, only four months from seed. These are planted closely together for the express purpose of making a "pig-proof" fence in three or four years. The trees also, a few years later, furnish food for the pigs which are very fond of the algaroba beans, and fatten readily on them.

no doubt there is less honey-dew honey since the leaf-hopper, the pest that at one time threatened the extinction of the cane-sugar industry of the islands, has been brought under control.

SOME GENERAL DATA ON HAWAIIAN ALGAROBA

When I started to collect algaroba data I asked Oswald St. John Gilbert, manager of the Sandwich Island Honey Co., and Treasurer of the Algaroba Feed Company, both Hawaiian corporations, and who is, perhaps, the best-posted man on the subject of algaroba in Honolulu, to give me his estimate as to the number of acres of algaroba on Oahu; the amount of beans that a tree would produce; how long it takes a tree to bear; how heavy a honey-yielder the algaroba is; and the amount of algaroba being now planted. The figures Mr. Gilbert furnished me are as follows:

AS TO EXTENT OF THE ALGAROBA FORESTS

There are in the neighborhood of 17,000 acres of algaroba on the island of Oahu. As to the amount of beans that a tree would produce, his estimate is that a tree with a thirty-foot spread, planted from select seed, under normal conditions, will produce approximately five hundred pounds of beans. As to the annual crop, many of the trees are yet small, and his estimate of the annual crop for Oahu is approximately 25,000 tons. As to how many years it takes before a tree will produce pods, he replied that a tree from selected seed should produce pods in from four to six years. It is a rather difficult matter to get at the amount of honey produced, yet he thinks that a tree with a thirty-foot spread of branches would produce two and a half pounds of honey in a normal year. In the matter of the amount of algaroba being now planted, he stated that it is still being spread by cattle, the reason being that, as most of the stock pick up the pods from the ground underneath the tree, the seeds, being uncracked, are not digested. In the matter of systematic planting and caring for algaroba-trees, the Gilbert & Dowsetts interests are the only people on Oahu who are doing it. During the year 1916, prior to October 1, they had planted under his supervision over a hundred thousand algaroba-trees. These trees were planted for stock food, firewood, and for honey.

Honolulu, Hawaii, Oct. 28.

FALLACIES IN BREEDING

Raising Queens from the Best Honey Producing Colony Not Always the Best Policy in the End

Geo. W. Phillips

THERE are two angles of approach to the subject of apiculture. The first is purely academic. The scientist studies the bee as he might study the vermes or extinct geologic specimens; and the man who obtains his doctor's degree for profound histological research might erstwhile be unable to produce a decent super of comb honey or get a lone queen-cell accepted.

The second angle of approach is practical. A man knows his job. He may not be conversant with the veriest elements of biology. He may never have looked thru a microscope. But he knows when the tops of his combs are beginning to be fringed with whiteness it is time for supers. He knows swarming plans. He knows how to get queen-cells accepted. Scientific talk is to him gratuitous jargon. He achieves results—and that's all he is after.

Now and then you find a rare man who is big enough to embrace both points of view—to reinforce practical apiculture with profound scientific knowledge. Such a man, for instance, is my esteemed namesake and acquaintance, Dr. Phillips, of Washington.

While the majority of our successful beekeepers are not college men, it seems to me the thoro conception of a few fundamental biological laws might greatly expedite their earnest efforts to achieve those finer strains of stock for which all bee-breeders strive. At least, it would point out the main paths of possible progress, and save time wasted in following "blind alleys."

SOMA PLASM VS. GERM PLASM.

There are, so to speak, two kinds of material that enter into the structure of an organism. The first is "soma" or body plasm. It is local and short-lived. It begins with the individual. It ends with the individual. Its inheritability is almost negligible. The fact that a blacksmith develops big muscle is (if that muscle is acquired and not an inherent tendency) no indication that his child will be robust. The fact that a man loses an arm in a railroad accident is no forecast that his progeny will be one-armed. In either case the change is in the "soma" plasm.

The second element is called "germ" plasm. That is everlasting—carrying the essential characteristics inherent in the individual down thru the long lines of heredity. Germ plasm is the physical vehicle for the transmission of life; and any essential change in the germ plasm is at once grasped upon by nature, and, if it possesses survival value, becomes a dominant factor in progressive evolution.

ACQUIRED CHARACTERISTICS VS. VARIATION.

Corresponding to soma and germ plasm are the two well-known factors of organic development: Acquired characteristics and congenital variation. The first applies to those characteristics acquired in the life history of the individual. They indicate changes in the soma plasm, and their influence upon heredity is *extremely* slow—some scientists say, not at all. At any rate, for practical current beekeeping they are negligible. How many ages did it take to bronze the Indian or bleach the Caucausian?

The second element is *congenital variation*, and implies a change in the germ plasm itself. This may be considered under two aspects:

1. *Gradual variation.* No two peas in the pod are exactly alike; no two queens. These variations are probably due to the several possible combinations of the male and female elements in breeding, as well as to the recurrence of far-off ancestral traits. Some of these variations tend downward (reversion); others tend upward (evolution). Right here is the queen-breeder's chance. By carefully selecting those queens whose colonies show desirable qualifications he may greatly assist nature in giving the desirable traits survival value. And this is the reason why some careful breeders may produce gentle bees, hardy bees, yellow bees, etc. In fact, it is my opinion that by this method may be produced even a strain of bees immune to certain diseases. It is well known that certain Arabian tribes, altho they drink water infested with typhoid bacteria, are immune to typhoid fever. Why? Because those individuals who were susceptible have died. Those remaining can't die. Perhaps nature, unaided, would in time weed out in like manner all bees susceptible to European foul brood and leave a race immune. But this end might be tremendously hastened by the intelligent apiarist.

2. *Mutation.* This is sudden variation. It implies a drastic modification of germ plasm, and is immediately transmitted thru

heredity. In common parlance we call it a freak of nature. For instance, the phenomenal Root queen would represent a mutation—an upward bound. And could the mating of her offspring have been controlled, she might have proved the parent of a transcendent strain. The Concord grape was a mutation from the wild grape.

It will be seen, therefore, that the beekeeper must ever be alert to detect these desirable variations, and not waste time upon stocks whose characteristics are acquired. The latter lead us only into blind alleys. For instance, you say gentleness is an essential. Colony No. 1 is gentle; therefore, breed from that queen. But why is colony No. 1 gentle? Perhaps because said colony is rendered docile by frequent contact with people. Queens from that colony may develop vicious bees. The characteristic was acquired — not inherent. For instance, again: Colony No. 2 has produced a tremendous honey crop; therefore breed from that queen. But why the big crop? Perhaps because the queen was a vigorous layer. But *why?* Perhaps because she was well reared. Her cell was built by a roaring colony in the swarming season. If the vigor her colony displays is due to the numerical abundance of bees she produces, and not to the inherent quality of the individual bee, her daughters may be doomed to mediocrity.

The other day I read an article about a beginner who had bought several Italian queens and a swarm of black bees. The blacks produced a bigger surplus; therefore he favored the blacks.

But why did the black colony transcend? Simply because, for some reason, the black queen had a better individual life history. The Italians, while possessing a far better racial history, were probably not so well nourished as queen-cells, or were growing old. But given an equal chance in the second generation, the inherent vigor of the Italians would predominate, and the blacks would be left in limbo.

Right here is a fine point to be considered in the production of queens. There are two kinds of people who purchase queens: Those who buy for breeding, and those who buy yearly for honey-gathering. A poor layer may be highly profitable to the breeder, provided she is not genetically so. Her lack of fecundity may have been brought about by old age, accident, or even because of poor nutrition in her larval stages. But these are soma-plasm modifications. Her well-bred daughters will immediately "revert" to the high type of her ancestral line. Really, I do not believe the prolificness of an individual mother ought to be so loudly proclaimed as a breeding asset—only so, if that prolificness be congenital. Give me a poor layer from a vigorous honey-producing strain, and let her poverty of eggs be due to her own improper larval nourishment, and I am sure I could produce from that queen daughters of maximum prolificness. In breeding it is the *racial* line that counts. So much from the breeder's standpoint. But the honey-producer also buys queens; and let us say that he buys absolutely all his queens, rearing none. Then the vital question with him is not the *racial* but the life history of the queen. Of course, if both are combined so much the better. But of the two, the queen's life history is the predominant requisite. A queen may be of the finest strain; but if she is old, if she has a leg injured, if she emerged from an improperly nourished cell, good by honey!

In other words, if I am a honey-producer I will sacrifice racial vigor to individual vigor. I can do better with a well-reared queen from poor stock than with a poorly reared queen from fancy stock. If, on the other hand, I am a breeder, I will sacrifice individual vigor to racial vigor. I can do better with a poorly reared queen from fancy stock than with a well-reared queen from poor stock. Here I am after germ plasm—not soma plasm.

Ignorance of these principles often leads to the most ludicrous conclusions. For instance, years ago, while I was yet in the West Indies, there was much controversy about clipping queens' wings. Some one even declared certain of his bees were hatching wingless because his queens for generations had been clipped! Such a man had evidently forgotten that horses' tails have been cut short from the time of Pharaoh—and dogs' also. Yet hounds and horses are still born with normal tails.

The same applies to the fiction of "Northern-bred Queens." A white man in Africa is a white man. It will require aeons to make his burnt skin in the slightest degree hereditary. A standard Doolittle queen reared in Florida is as good as a standard Doolittle queen reared at the North Pole.

Lebanon, Ohio, Sept. 26.

[Mr. Phillips, as many of our readers know, while not related in any way to Dr. E. F. Phillips, has been quite prominent as a beekeeper and queen-breeder. Born in Jamaica, he was a successful beekeeper in that country, and after coming to the United States was for several years head queen-breeder for the A. I. Root Co.—Ed.]

BEES TRIED BY FIRE

A Remarkable Case Showing How Bees Can Keep Down the Temperature in the Hive

By E. R. Root

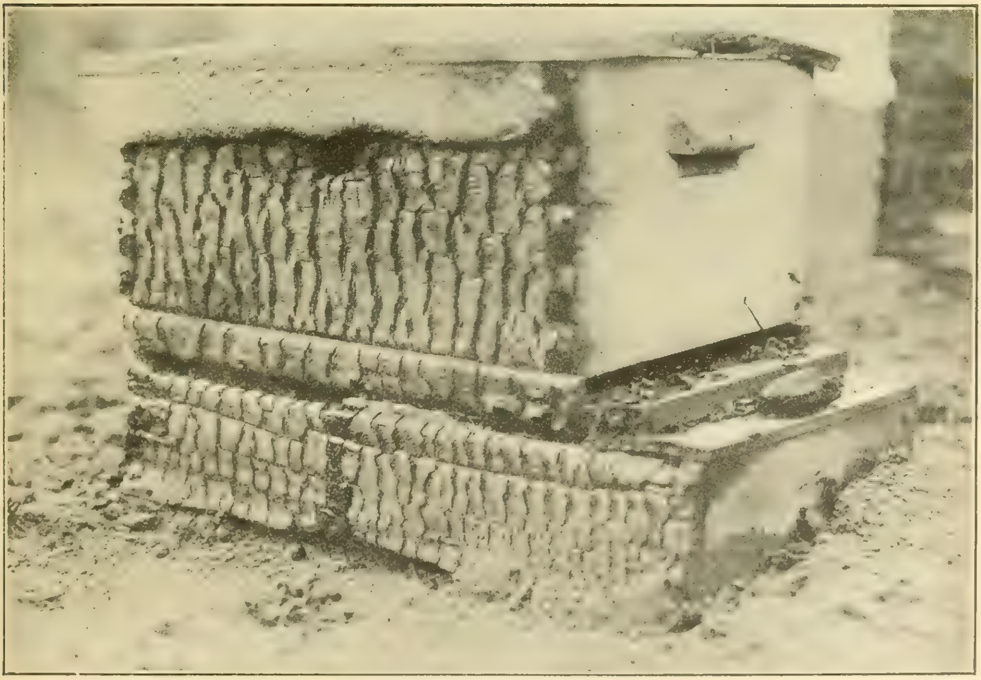
AT our recent lumberyard fire a little backlot apiary belonging to A. L. Boyden's boys was located within 100 feet of the piles that were burned. The heat was so great that it looked at one time as if the lumber, including all our manufacturing plant, would be reduced to ashes. During the general excitement the little beeyard was forgotten. After the fire was over, a hive located nearest the fire stood out as a remarkable instance of the power of the bees to keep the internal temperature of the colony down in spite of a $25,000 lumber fire near by. The engraving below, when it is understood that there was a nice colony in the hive "after it was all over," almost tells its own story, and a wonderful story it is.

The heat was so intense that all the woodwork under the metal cover was burned away, even the front rail. A piece of it is shown where it dropped down at the entrance. The fire not only burned deep on the side but actually burned a hole thru the center. The comb next to it was melted down, as will be seen by the black stain where the wax ran on to the side board of the hive-stand. Not only was the wood burned out from under the tin roof, but the top-bars of the brood-frames were charred half way down. That a colony could survive under such conditions is unbelievable.

Any one would have supposed that they would have been driven out of the hive, and that all the combs would have melted down, and that the wax would have ignited, leaving nothing but a pile of ashes. But, remarkable to relate, at the time the photograph was taken there was a nice colony of bees, and all the combs were intact except the one next to the hive, which had been melted down.

These bees, as soon as the hive became scorching hot, must have gone into the business of ventilating with the knowledge that the flames of hades were after them. The men who fought heroically to keep down the big lumber fire could not have worked harder, and every bee must have gone into the business of fanning, blowing a current of cold air into the hive and the warm air out. It surely was a life-and-death struggle.

We have heard of instances where colonies left out in the hot sun have had their



The bees that kept the inside of the hive cool in spite of the fire.

combs melted down; but evidently they had a restricted entrance, or too many bees in the fields, to keep up the necessary ventilation.

Why the hive here shown did not burn up entirely will remain an unsolved mystery, unless we admit that a good colony can do more in ventilating than we usually give it credit for. It is possible and even probable that some fireman, seeing the plight of the hive, dashed a pail of water on it and thus saved for us a relic that is exceedingly valuable in showing the power of bees to keep down the internal temperature of the colony, even tho the outside of the hive was afire. It will be noticed that the entrance is ⅞ by the width of the hive, and that would afford ample ventilation. If it had been contracted down to the usual space, in all probability the combs would have melted down and the bees been destroyed.

BEES VS. SMELTERS

A Famous Case Comes to Trial in the Supreme Court of Ontario, Can.

By E. R. Root

OUR readers will remember that several times during the last year we have spoken of troubles between the smelters and the beekeepers in Ontario, Canada. We also stated that the beemen had brought joint suit against the smelters, claiming $30,000 damages.

For the benefit of those who do not understand, it should be explained that a smelter is a plant for the reduction of ores. The raw ores consist of rocks in which are incorporated various metals — gold, silver, copper, zinc, etc. These rocks are ground up and then subjected to an intense heat. The various gases arising from the reduction are carried off thru high stacks. These gases consist of SO^2 and SO^3, and, with water, H^2O, make H^2SO^4, or sulphuric acid. SO^2 (burning sulphur) is the gas used to kill bee-moth, and, of course, if strong enough, would kill bees.

A great deal of free arsenic is carried out thru the stacks of the smelter in the form of dust, and the dust falling on the vegetation in the immediate vicinity forms a grayish-white deposit which, uniting with the dews, forms a sort of coating over all plant life within reach. This coating on hay crops has been reported in several cases to have caused the death of domestic animals and to have destroyed the vegetation itself in some cases.

In nearly all places where smelters have been located in the United States, bees have died off. The claim is made that the free arsenic, uniting with the pollen dust, nectar, and the ordinary dew of the morning, is carried by the bees into the hives; that this poisonous mixture, whether in the form of nectar, pollen, or dew, kills off both the bees and brood. Arsenic is only partially soluble in water, so when it is taken into the hive mixed with water, pollen, or dew, it forms a mechanical combination — not a chemical mixture. In either case it would be poisonous.

Arsenical sprays are used very largely nowadays in spraying fruit-trees to kill off the codling-moth. The poison known as the arsenate of lead is mixed with water. This combination is then thrown by means of spray-pumps on the trees, causing a coating of the arsenic on the leaves and blossoms. The larvæ of the moth, by eating these, are destroyed.

That the arsenate of lead is a rank poison to bees is shown by the fact that certain states have passed laws against the throwing of arsenical sprays on trees while in bloom, because experience shows that the bees are killed by gathering the nectar from the blossoms that are coated with a deposit of arsenate of lead. Experience also shows that bees are killed where the arsenate of lead falls on "cover crops" beneath the fruit-trees in Colorado sprayed when the trees are not in bloom.

While there has been a general complaint that bees in the immediate vicinity of smelters die off in large numbers, no suit for damages was brought against any smelters until 1907 in Utah, where the smelters paid $60,000 damages to the beekeepers.

For a year or so back, there have been reports coming in, telling of a fearful loss of bees in the vicinity of the Coniagas Reduction Co., of Thorold, Ontario. Something like 700 colonies, it is claimed, have been killed outright. For miles in all directions one sees beautiful fruit and farm lands, and these, within a few years, have been devoted to the growing of fruit as well as general farm crops. In such a locality bees would naturally thrive.

A few years ago this big smelting concern, having a reported capitalization of three and a half millions of dollars, located their plant at Thorold. Shortly after, complaints began to pour in of bees dying it was claimed as the direct result of the smelter smoke, the bees dying worst in the direction of the smoke carried by the prevailing winds. Finally the beekeepers in the locality combined together in a joint suit against the smelter company. The case was postponed from time to time, but finally came to trial on Nov. 30. Whether the fruit-growers and farmers joined with the plaintiffs in the action we are not advised; but evidently they were very much interested, because, if the smelters killed off the bees, it would cause a marked reduction in the volume of their fruit.

The best legal talent was employed on each side, the case being fought in the supreme court of Ontario at St. Catharine's.

The plaintiffs, of course, introduced the case of Utah, where the smelters paid the beekeepers $60,000 damages. They also introduced evidence to show that horses belonging to the smelter company died, which the defense admitted, we are informed.

The direct testimony of the beekeepers who had suffered loss showed that their bees died in large numbers—in 1909 more particularly, and every year since, within a range of from one-fourth to five miles of the smelter. But the loss it is claimed has been less since the company has used screens for catching the free arsenic.

The defense sought to show that the bees died from natural causes; that the symptoms described by the beekeepers, of bees dying, were the same as those of bee paralysis, Isle of Wight disease, and the disappearing disease. It also tried to show that brood diseases might progress far enough so that the old bees would die off, and the colony thus become extinct, because there would be no new blood to supply the loss.

The editor of GLEANINGS was called in by the plaintiff to tell how far bees would fly—to describe the various adult bee diseases and to show that the symptoms as reported by the various witnesses of bees dying within the vicinity of the smelters were not the same as those of the Isle of Wight disease or bee paralysis.

We were kept on the witness-stand for about three hours and a half. Prof. Morley Pettit, of the Apicultural School of Guelph, next followed as expert witness for the plaintiff. The defense "went after" both of us—a matter to be expected. Our testimony tended to show that the reported symptoms were not the same as those of adult bee diseases, but, rather, of poisoning.

At the time we left, Dec. 2, it was hard to say how the case would go; but we have been informed that the main plea by the defendant was that the plaintiff had "made no case." The judge has taken the matter under advisement, but at this writing he has rendered no decision.

A decision for the plaintiffs, if we understand it, will not mean that the smelters, who employ an army of men, will have to shut up shop; but it will mean that they will be required, probably, to pay damages already sustained, and to use better means for preventing free arsenic from going up the stacks and being scattered all over the vicinity, destroying vegetation as well as animal and insect life.

There were some amusing incidents that came up during the trial—particularly interesting to the beekeepers present. The attorneys on both sides of the case had been "cramming" up on bee-lore. They had hunted up everything on the subject of bee diseases, poisons, smelters, distance bees fly, and anything and everything that might have a bearing on the smelter question. Some of the questions were funny, showing that "a little learning is a dangerous thing." Some questions could not be answered by yes and no, because they assumed impossible conditions. Other questions could not be answered in the manner stated, and his lordship the judge was fair enough to ask counsel to restate their questions.

One question asked by the defense was that, "Assuming that all the brood in a hive was dead as the result of foul brood, would not the bees gradually die off, leaving nothing but the hive and combs?" We replied by saying that "The condition referred to rarely if ever occurs." Counsel came back by saying, "You did not answer my question. I am not asking you to answer another question." After some parleying we were permitted to say that foul brood alone rarely kills a colony; that only about half the brood would be involved in the worst case, when the colony in its weakened condition would die as a result of spring dwindling, or winter cold. Defense was evidently anxious to show that foul brood could and does kill adult bees during the summer time and therefore might explain bees dying near smelters.

As soon as a decision is given by the judge we will announce the result.

GLEANINGS IN BEE CULTURE

FROM THE FIELD OF EXPERIENCE

Conversations with Beekeepers

"I have kept bees for three years beginning with three colonies, and now have fifteen. I am thinking of taking up beekeeping as a business. Is it safe to depend upon honey-producing alone for a livelihood?"

If the circumstances are right, it is safe for nearly any person to make apiculture his sole business. This is not saying that no one except the specialist can keep bees to advantage. Many of our most successful apiarists do not depend alone upon beekeeping for their livelihood. In fact, the majority of those entering the ranks of apiculture mix general farming, dairying, poultry, truck-gardening, or something of the kind with the bees.

One of the very important things about the keeping of bees as a business is the location. There are localities so poor—that is, so lacking in honey or nectar producing flora—that it would be folly to attempt the keeping of bees as a business. Suppose the place to be one where nearly all the land is used for the raising of wheat, oats, corn, cabbage, and potatoes, thus being kept "under the plow" nearly all the time. It goes without saying that ten or even twenty square miles in such a locality would not keep 100 colonies, to say nothing of a surplus. But with plenty of willow, maple, and fruit bloom to give the bees a good start in the spring; clover and basswood for the main surplus and buckwheat and fall flowers for the "wind up," one-half the square miles mentioned should prove a bonanza to the man or woman who has a taste for beekeeping, and who is able-bodied, diligent, active, and skillful withal.

More depends on the man than on any other one factor unless we except location. Some can build up a magnificent business in beekeeping where others fail. The beekeeper must have a love for the business; perhaps this has more to do with the successful outcome than any other quality. One really in love with beekeeping will leave no stone unturned, will consider no hardship too great, will not be turned aside by one or a hundred stings, nor be tempted to sit in the shade on a hot day. All hardships are but pleasures to one having the "bee fever." Have you ever watched the successful players in a ball game? What do they care for the hot sun or the strain of muscle necessary to win? With me, a ball game is no comparison to the pleasures of beekeeping. However, our questioner may not consider that pleasures have much to do with livelihood. Of course, the matter of dollars and cents must be looked after, or it will be "over the hills to the poorhouse." But I wish to go on record as saying that dollars and cents come in the greatest amount to the one who is carried away with the *love* he finds in the chosen vocation.

As to the number of colonies which should be kept, there is a difference of opinion. Some say from 250 to 300, others 500 to 800. This is quite an important point, and one frequently overlooked, especially as to how many the locality will permit of keeping to the best advantage. "If a man in a good locality keeps only enough bees to support him in a good season or, possibly, in an ordinary season, and then comes a succession of poor seasons, some other business must be added to the beekeeping." So said a successful apiarist some years ago, and then he added: "And the best thing to add is some more beekeeping; but, strange as it may seem, few seem to look at it in that light."

Men like W. L. Coggshall and S. D. House, of this state, have gone into beekeeping extensively, established out-apiaries, managed their business as a *business,* instead of merely a pastime, and have succeeded to an extent which should satisfy any intelligent person. One or two good years with a large number of colonies of bees in a good location enables the owner to lay up enough to tide him over several years of poor or indifferent crops. The trouble with a small number of colonies is that not enough honey is secured, even in good years, to enable the owner to put very much money in the bank, beyond what is necessary to keep his family and the bees over the poor seasons, and so he has very little to carry his family along when old age arrives, or when sickness lays him aside for a few years in the prime of life. It is for this reason that it is an advantage to have more bees scattered about in several out-apiaries as this plan tends to secure a crop each year. Localities differ to a great extent, even when only a few miles apart. In an average or somewhat of an "off year," enough will be gathered by all of the apiaries to "make a living;" and when one good year follows another, as quite often happens, enough can be laid away to build a home and fix for a comfortable old age.

Borodino, N. Y. G. M. DOOLITTLE.

* * *

Letters from a Beekeeper's Wife

Home, January 1, 1917.

Dear Sis:

The Christmas box that came the day before Christmas from your house could not have been more enjoyed. Billie has been out on his skates every day since, and the girls are delighted with their muffs. They have always wanted furs but we thought we couldn't afford them. Now that they have muffs we are going to take the money out of our private I. P. T. A. fund and get them neck pieces to match.

Have I ever told you about the I. P. T. A. fund? It stands for "It Pays To Advertise"—and it certainly does. We never realized how much it pays until our road became part of the Jefferson Highway. A year ago last autumn, just after the concrete road was laid, we found that we had considerable fall honey which was very good but it was what the buyers call "off color." Rob conceived the idea one day as we sat watching the autos whiz past that we might be able to sell that honey to passersby. That is an undeveloped trade, so if we can sell to them it means just that much more honey disposed of.

He talked about it all winter off and on, but, man-like, never did anything until spring. One day he painted a big sign, "HONEY FOR SALE," and nailed it to a post at the gate at the east end of the lot. It wasn't a sign painter's job, and may be that convinces the city folks that we have "bee honey." Mother was here at the time and may be she told you how scandalized she was by that sign! I don't see just why she thought it so much worse to sell honey at our door than to send it away to be sold, but in her mind it "lowered" us in the social scale to have the sign up. I don't take much stock in social scales. They are never balanced, are they? So I was just as eager as Rob to see what would happen. I had a little honey in quart Mason jars—not the green ones, of course—all ready and had previously ordered some plain labels. I don't believe it was more than an hour after that sign went up before an auto stopped and a man came up to the door. To be sure, he didn't buy—he wanted comb honey—but he was interested and even went out to look at the hives. The next day another auto stopped at the sign—a Ford this time—and those people took a quart of honey. It's queer, but we seem to sell more to Fords, perhaps because they can stop more easily. We put the 65 cents in a Mason jar, and Mother assured us that we'd never have any more to put in from that source, but we felt elated. If only *one* person a day was halted by the sign and bought one quart of honey we would be getting twenty cents a pound for that much honey instead of seven or eight. There's a big difference between wholesale and retail prices!

Well, do you know that scarcely a day passed after that but some one stopped to buy? and as the warm weather came on, bringing tourists by the score, we could scarcely keep up with the demand. That's why I have so little canning done for this winter. We actually had to buy more honey to sell to our auto trade, which makes Rob sore when he remembers that most of our crop last year was sold at wholesale.

We noticed that machines coming from the east stopped frequently but that those going the other way got too far past before they could slow down, and we usually lost their trade, so Rob put another sign at the west end of the lot, to "catch them coming and going" It's tremendously interesting to watch the machines come flying by—then come to a halt. There's a little conversation, some hesitation, then (particularly if there are children aboard) some one is almost sure to get out and walk up the line of basswoods. Our Mason jar bank was outgrown long ago—on Labor Day we took in $35. With this weather of course auto traffic is at its lowest ebb, and yet I dare not have less than a half dozen jars ready on the shelf. There are so many calls for comb honey that we will buy some next summer to have on hand. Rob says he can buy that cheaper than he can produce it, but may be that's true of the extracted too, for selling honey is more profitable than producing it.

The nicest part of all is that so many come back for more. Rob has visions of

FROM THE FIELD OF EXPERIENCE

some day selling all of his own honey and more besides, from his own doorstep. Wouldn't it be fine if he could? Mother is convinced now that it pays to advertise and has even got over the feeling that "it isn't done by the best families." So we have accomplished more than all the profit by widening her horizon a little.

I forgot to tell you that Rob has promised to take me to the state convention next month — the beekeepers' convention of course. I'll tell you all about it later. I'm curious about it.

Your loving sister,
Mary.

* * *

Two Years of It

In 1915 a neighbor gave me two late small swarms. I put them in boxes, but got no honey that season.

The following December I commenced to get ready for the next season. I sent for five ten-frame hives and other supplies, and when they arrived I had a good deal of pleasure in putting them together and painting them. I put on three good coats of white paint, and painted black numbers on the front. I was very proud of them.

I wintered the two colonies without any protection on the south side of a building. One of them came thru all right, but the other starved some time in February. I sent for a three-frame nucleus of three-banded Italians, including a queen, from Texas, which arrived May 11. These I put in one of my new hives; and as the days went by I learned to handle the frames and find the queen.

In the first part of July I caught two stray swarms in hives I had put up in a tree just back of my barn. This made four colonies. I then sent for an Italian queen; and when she arrived I took three frames of sealed brood and placed them in an empty hive, putting this hive on the stand of the colony of bees in a box hive. (This colony had not swarmed.) I introduced my queen and she was accepted. The colony in the box hive that I moved away lost all of its flying bees and was robbed out later in the fall. The queen that I introduced began laying; and about the time all the bees in the hive were Italians I found no brood in the combs except the few cells of drone brood about to hatch. A week or ten days later I examined the combs again and found quite a patch of larvae and a few cells of sealed brood. I do not know whether the queen quit laying and began again, or what the trouble was.

The three-frame nucleus that I bought in the spring increased rapidly and began to work in the supers August 5. They made 65 sections of honey from starters. There were also 15 sections about full of combs, but containing little honey. I put these over another colony, the bees of which carried the honey down into the brood-chamber, leaving me the 15 bait sections for spring. The nucleus and the express cost about $5.00, the hive $3.00. I sold the 65 sections at 12½ cts. each, so the nucleus paid for itself and for the hive the first year, and I have a good strong colony left with a brood-chamber full of honey. When I started with this nucleus there was only one frame that had a full sheet of foundation. The other frames had only starters.

November 19 I put the bees away for winter. On the fronts of the hives I tacked thick paper. Each inner cover had a hole in it, and between this and the outer cover I put a piece of old quilt. I then carried the hives to a strawstack facing southeast. I pulled out enough straw to make a space large enough for the hives, pushed them in, and packed all around them clear to the front with straw.

I weighed all of the hives as I took them away. The ones I bought in the spring weighed 86 pounds, the others 76 and 65 pounds respectively. An empty hive, bottom and cover, weighs about 38 pounds.

I keep the bees about 40 feet from a public road. If any one should be stung would I be liable for damages? Is there any law in this state compelling me to keep the bees a certain distance from the road? Howard C. Pfaltzgraff.

Dumont, Iowa.

[It is not always safe to judge the amount of stores by weighing hives, combs, bees, and all, for the hives vary in weight as do the combs. Furthermore, the colonies vary in strength. We should say, however, that there are stores enough; for even if there were ten pounds of bees in each hive, and the combs weighed a pound apiece, that would leave nearly twenty pounds in two of the colonies and nearly thirty in the other one. The one weighing in all only 65 pounds might run short before

FROM THE FIELD OF EXPERIENCE

spring. This would depend somewhat upon the strength of the colony.

We know of no law in your state compelling you to keep the bees a certain distance from the highway. In some of the states there are laws having such provision, but they are not enforced.—ED.]

* * *

If Langstroth Were Alive

At one of our short courses I met an old beekeeper who attended a gathering of beekeepers for the first time. Being one of the old settlers his struggles and financial difficulties would not allow him to treat himself to a pleasant vacation, for he had to come one hundred and fifty miles. When the course was over he said to me: "It is worth all the time and money I spent coming here to learn how to hive a swarm by putting it on the old stand and moving the parent colony to a new stand to prevent after-swarming." It was a pleasure to look into the smiling face of the old man, and to feel his warm handshake. It was a lesson to me to see and hear him; and, bless his soul, I have learned from him more than he learned from me.

At the same course I also met another man who explained to me how he manages his bees. He increased four colonies to twenty-eight in one spring, and obtained a surplus of 800 pounds of comb honey for the market. From him also I learned a lesson of great value to me. Both men were of the every-day kind of beekeepers as we meet them everywhere, and both lessons were to me worth more than time and money spent at the short course. There is no beekeeper from whom we may not learn something that will be of great benefit to us, no matter how simple and unknown. Field days, short courses, state and county conventions, and fairs, are occasions for a mental treat to any beekeeper who has ears to hear and eyes to see.

But the treat of all treats is the chance to meet the great minds of the beekeeping world—these men whom we know from their book and magazine articles, whose success has been a silent inspiration to the beekeeping fraternity of the land. Now these men, whose names are so familiar at all beekeepers' firesides, do not live in a bunch together, that we might undertake a pilgrimage to their homes. They are scattered over this whole immense continent. There is no question in my mind, that, given an opportunity to meet these men all at one place, the beekeepers for hundreds of miles around would leave their bees and their shops to go and shake hands with them.

If father Langstroth would come back to life and invite the beekeepers of the land to come and see him and shake hands with him, and hear him lecture on bees and beekeeping, the crowds would travel to his town from all over the Union to enjoy the rare treat.

We have just as great beekeepers living in our midst now as Langstroth has been. They are ready to meet the beekeepers of the land, not once in a lifetime, but once a year. They do not wish them to travel thousands of miles to see them, but they go to them. Year after year they gather in another part of the states. The National Beekeepers' Association is the occasion which brings them together.

It is worth all your time and money to go and see and hear these men. They are going to be there. They enjoy these gatherings, and look upon them as a vacation and a treat.

The National Beekeepers' Association will meet in February at Madison, Wis., with Mr. N. E. France as host. No true beekeeper can afford to miss it. For membership in the National and other information, write to F. Eric Millen, Sec., East Lansing, Michigan.

FRANCIS JAGER,
President N. B. K. A.

* * *

Selling Honey in England

In England beekeepers may be roughly divided into two classes—those who raise more honey than they can sell, and those who sell more than they can produce. Happily the former class are rapidly growing less as the increased demand for honey absorbs the season's produce much quicker than it used to do; while the prevalence of disease of itself reduces considerably the honey crop of many districts. Therefore the problem of overproduction at the present time causes little distress among English beekeepers.

There is no denying the fact that people eat more honey than they formerly did. A greater efficiency among bee-appliances, and better methods of harvesting honey, have enabled the apiarist to secure his surplus in its best form, to get it on the market earlier, and present it more attractively to the public.

The number of small beekeepers thruout the country is very large indeed; but the number of bee-farmers or wholesale producers of honey who devote their whole time to the industry might be counted on the fingers of one hand. Upon these large producers devolves the work of supplying the stores and dairies with honey thruout the year. Usually the friends and neighbors of a beekeeper take most of his produce as fast as it is removed from the hives, for it doubtless appeals to them as the pure article.

The most favored packages are round glass jars, either with a screw cap or tied over with white vegetable parchment in 1-lb. and ½-lb. sizes. Frequently they are adorned with a tasty label of the beekeepers' association to whom the apiarist belongs, which of itself guarantees the quality of the honey to be good.

In a scanty season honey sells with scarcely any advertising; but when there is a heavy crop, and new outlets are sought for, a certain amount of soliciting is often necessary; and of doing this there are as many effective ways as there are of killing a dog. A few samples distributed to likely buyers; a few concise pamphlets on the healthfulness of honey; an exhibit of comb honey or jars at a flower show or town market, are excellent means of introducing the produce of the hive to good advantage.

In supplying honey for resale by grocers and at stores, one or two special points need to be borne in mind. First, to provide honey of a high uniform quality and good selling color; then to sell it under a brand by which customers, if satisfied, might be able to distinguish it again.

Once the grocer finds a demand for a certain brand of honey he will require a further supply from time to time, and this necessitates keeping a quantity in bulk or ready bottled to meet this need.

Here the small beekeeper is somewhat handicapped; for when his crop is sold he has no more to offer. On the other hand, the larger producer can often purchase from localities where the yield is heavy but demand slight; and this often relieves a surplus in other markets, which, after all, is frequently the root evil of low prices. In England the demand for honey is greater early in the season, when the new season's produce is placed on the market. As the fruit season comes on it diminishes; but from October onward it is well maintained till the new year.

Honey in 1-lb. screw-top and ½-lb. jars is sold wholesale at $2.50 to $2.90 per dozen this year, retailing at ½ to ¼; and for ½-lb. jars 8 and 8½ pence each, the wholesale rate being $1.44 or $1.56 per dozen, depending on quality.

A package coming much into favor is a parchment vessel holding 15 oz. of honey, which, when granulated, is capital for sending to soldiers, as the pots are light and not easily damaged.

All things considered, the outlook both as regards the demand and increased production of honey in England is full of promise; and it needs only the banishment of the Isle of Wight disease to make the pursuit one of the most, if not *the* most, important of our rural industries.

A. H. Bowen.

Cheltenham, England.

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Effective National Advertising

Having given considerable study to advertising, and read a large number of the articles on the subject that have appeared in the pages of Gleanings, I have come to the conclusion that we have not been down to bedrock on the essentials of advertising as taught by modern schools devoted to this subject. Summarizing the somewhat long-drawn-out instructions, one is faced with three broad principles upon which success ultimately depends. First in importance we must appeal directly to the personality of the reader; that is, to something that actually concerns either his welfare or his ideal. Such an appeal is not made by the mere words "Eat Honey," of the much-lauded sticker. Second, we must devise an advertisement that will be outside the groove of the usual eye-catching advertisement. Third, we must be brief. As brevity is the soul of wit, so it is of successful advertising.

The sticker, "Eat Honey," has been pushed more than any other in recent years; but while it is good in its way in lieu of nothing at all, it does not contain the first principle of successful advertising. It fully carries out the third, but has little or no claim to the second. Obviously it says either too little or too much.

FROM THE FIELD OF EXPERIENCE

That honey aids digestion does not appeal to the person with the splendid appetite which we wish our consumers to possess. Such an idea suggests that honey is a food for the invalid. We must adopt something stronger, and at the same time, if possible, something actually startling and of definite educational value. If we want the public to sit up and take notice we must adopt something very different from a mere statement which they can believe or not, as they wish. We must tell them, in a way that can not be contradicted, something that they did not know before. In doing this we carry out our second principle—that is, adopting something outside the ordinary groove of advertising.

In honey we have a unparalleled opportunity to make a good display, owing to the ignorance of the public upon a subject of so much fascination as the bees.

Let me suggest that no other thought so appeals to humanity, not even that of wealth or health, as does the thought of long life. Granting that whatever relieves the bodily organs of labor also lengthens one's term of existence, let us put down for a starter the words, " You cannot live as long as you should." Will such an expression answer? Perhaps many will say that it is all right for a start. Well, it is not good! Almost every one who reads such a statement will mentally remark, " Oh! that is some gag about living as old as Methuselah's ghost," and away goes the effect of our advertisement. Suppose we change it to read, " You cannot live long." Here we have our first principle carried out—that is, a direct appeal to the personal welfare of the reader thru a most startling announcement. Any one once roused out of the ordinary casual reception of the usual advertising matter will read further.

What else shall we say to fulfill the two other conditions? The second principle really includes the first—that is, personal appeal plus originality. We must develop originality further, nevertheless; but let us proceed truthfully, for sooner or later the slightest exaggeration defeats its aim. Suppose after saying, " You can not live long," we add the explanation " as you should," in very small type and then go on with a truthful and brief statement, " unless you eat less sugar and more honey." This is brief, but not backed up with any kind of proof. It is too brief. So we add another fact that the reader never knew before and can not contradict. Being a fact, the whole world must come to recognize it if we tell them sufficiently often. " Honey builds the system up and sugar wears it out." The whole thing should run like this:

" YOU CANNOT LIVE LONG as you should unless you eat less sugar and more honey. Sugar wears the system out. Honey builds it up."

So great has been the effect upon my private trade in this very thinly populated community that I feel warranted in placing this advertisement before the readers of GLEANINGS as a successful adaptation of information I have gleaned. It may be further improved upon, but just now I do not see any way to do it; and until something can be created that is still better I suggest that it be adopted as a sticker or stamp in place of "Eat Honey." Of course it takes more space; but I should like to see this kind of stamp or sticker printed on one or two grades of envelopes with also a neat illustration of an apiary to fill up the left-hand lower corner. If every honey-producer used such envelopes the large number used in a whole year seen by so many persons would be a most effective way of calling the attention of the purchasing public to the fact that honey has a really necessary place in the daily menu. I believe such envelopes could be sold by the large supply houses more cheaply than plain envelopes could be obtained from local printing-houses, provided the beekeepers recognize the value of such a medium and use the envelopes in really large numbers.

Advertising Jones' or Smith's honey is all right in one's own territory; but what is required for successful results is the everlasting publication of one great fundamental fact, and that can be obtained only by national effort. I therefore suggest the national envelope. H. BARTLETT MILLER.

Kihikihi, N. Z.

* * *

Crop All Sold, Anyway

My extracted honey was all sold by the first of November, as was nearly all of my comb honey. I sell in the home market only, and could have sold much more if I had had it. I sell at a higher price than do any of the other producers, either up or down the valley. My honey goes for $6.00 per 60-lb. can, even in large quantities. The price for small quantities is

$6.50. I sell the comb honey for $3.25 to $3.50 in second-hand cases or in no cases at all.

Not far away honey is selling for $5.40 per 60-lb. can. It is the custom of the beekeeper in question to leave the honey with a garage man to be sold at that price. Another producer near me sells for 8 cts. a pound. I can not see why beekeepers do not hold up the price of honey. I advanced it this year 50 cents per 60-lb. can, and sold out two months earlier than I did last year. Moreover, I had a much larger crop this year than the year before.

When my customers say, "Why, your prices are higher than they were last year," I merely say that everything that I have to buy is higher, and that I must get more for my product. I tell them that the demand is stronger this year, and that the best markets are higher.

I never sold honey any faster than I did this year. I believe I can work up a home trade that will take several cars of honey at a good price, provided other producers do not ruin the market with lower prices. Their honey must be almost identical with mine.

I have had more experience in selling honey than in producing it. I sold honey for my father for years. Since his death, two years ago, I have been producing honey as well as selling it.

Sedgwick, Col. C. E. Crowfoot.

Easy to Make for Winter Feeding

I have been making some bee candy that is so soft and creamy, and so easily made, that I wish again to urge beekeepers to run no risk in case of doubtful colonies. If there is danger that there may not be stores enough it is easy to make the bees safe by placing a pan of this candy over the colony. The recipe appeared on page 158 of the March issue for 1913, but since many may not have this particular number at hand I quote: "To a quart of boiling water add twelve pounds of granulated sugar, a teaspoonful cream of tartar, a pinch of salt. Allow this to simmer ten minutes, then remove from the fire and stir until it begins to thicken, when it is to be poured into molds." I find that eight pounds of sugar makes nine pounds of candy. In this way we can have an absolutely safe winter feed. I have found that care is necessary not to have the fire too hot. The syrup should not be stirred until it is taken from the fire.

A crop of 6100 pounds of honey was produced in one season by these 48 colonies on a plot of ground in Toronto, 15 x 24 feet.

FROM THE FIELD OF EXPERIENCE

SAVING STEPS IN THE APIARY

In looking at various photographs of apiaries in GLEANINGS I have noticed how scattered the hives are in some of them, necessitating many extra steps. The illustration herewith shows Mr. Granger's yard in Toronto, where in 1913 6400 pounds of honey was secured. The plot of ground is about 15 x 24 feet, and is situated just south of a greenhouse. There are 48 colonies in all in six rows, eight colonies to the row, both end rows facing outward. This gives over 2 feet between the backs of the hives and about 3 ft. between the fronts. In theory this may be too close; but in practice it works perfectly, as is evidenced by the good crops of honey. The extracting-room is just beyond the last row of hives out of sight. Very few queens are lost in mating. W. P. CLARE

North Toronto, Ontario, Canada.

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Hatching Queens Electrically

In California there is a great variation of climate, and it is not at all unusual for a very warm day in the early spring or late fall to be followed by a frost at night. Even in midsummer the nights are usually cold. Under certain conditions it is impossible to maintain sufficient heat in a colony of bees for the proper incubation of queen-cells in nursery cages. To overcome these extremes in weather conditions during the very early spring months, and secure an absolutely uniform temperature at all times, I was led to the use of the electric incubator for the hatching of queens. The advantages of the electrically heated incubator over one heated by a lamp are many. The regulator is much more accurate, the temperature not varying a quarter of a degree in months. There is no odor, no lamp to fill or wick to trim, and there is perfect safety.

I have found a temperature of 96½ degrees, with the humidity at 50 to 55, an ideal hatching combination. Without the proper amount of moisture the incubator would not be a success in this climate during the dry season. By wet sponges and pans of water in the machine, or by sprinkling the floor of the room with water, moisture is supplied until the hygrometer registers the proper amount. Of course it is important that the incubator be placed where there is no jar or vibration and also where there is no draft. A basement is a very good place.

There is a noticeable difference in favor of the incubator when it comes to introducing virgins thus hatched, especially if they are a few hours to several days old—a condition which can not always be avoided during rainy weather. The incubator virgins have acquired no individual colony odor, ways, or spirit, or whatever it is that causes trouble in introducing.

WHY INTRODUCE VIRGINS INSTEAD OF RIPE CELLS

There are several reasons why a virgin queen is to be preferred by the commercial queen-breeder to giving a ripe queen-cell the day before it is due to hatch—the ease of transporting the virgins to the out-apiary or mating stations, the opportunity of inspecting virgins so that none but the perfect may be used, and the saving of one or more days' time in getting virgins into nuclei, for they are simply run in at the top. In case of ripe cells there is always the danger of chilling and jarring; and even when placed with the utmost care in the center of the brood-nest of the mating nucleus, the temperature is seldom sufficient for proper incubation. The result is that a large number fail to hatch at all, and others are a day to three days over time, some having defective wings. Virgins that do not hatch on schedule time are invariably dark, and in every way inferior to queens that have been incubated properly.

To my mind there is no detail that the specialist can afford to overlook that will tend to bring his product to the very highest standard, and also increase his output; and since we know that an exact and uniform temperature is very important for the highest development of queen-bees I consider the incubator a very desirable adjunct to a modern queen-rearing establishment. J. E. WING

San Jose, Cal.

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Under date of Dec. 1, C. H. Clute, of Sanford, Fla., writes:

Maple is just starting to bloom. I noticed a tree about a week ago. and thought it was a freak; but on examination I have found many trees with buds, and with buds just opening. Aster is in full bloom, and the bees in reach of it are on the gain. The bees are in extra-fine condition, and will keep their drones all winter.

CAN THIS BE DONE?

The Most Remarkable Experiment in Queen-Rearing Under Cover Ever Tried

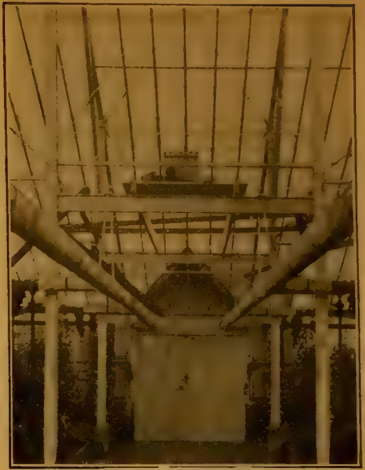
By the Editors

The greenhouse apiary

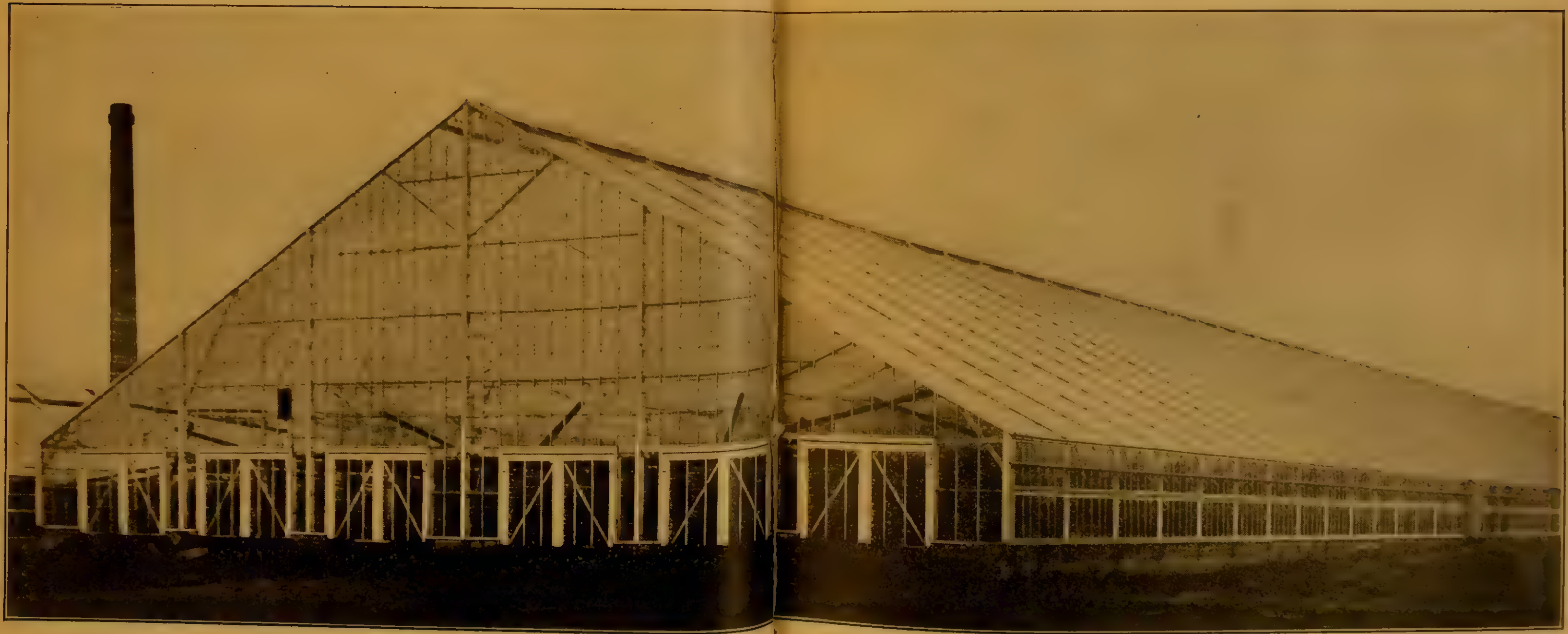
THAT age-old question of beemen again—Can queens be successfully reared under cover, and mating controlled? An attempt is now being made to answer that question, finally and for all time, by experimenting under favoring conditions and on a scale never before possible.

The largest glass building in America, a gigantic greenhouse, nearly 600 feet long, 60 feet wide and 30 feet high at the peak of the roof (the exact location of which the owners at present ask to have remain unpublished) is availed of for this very interesting and most important experiment which is now in the first stages of a try-out. At this time it is impossible to predict the result. We can merely say that the conditions for this trial are the nearest ideal of any yet found. A strong colony has been installed on a platform 15 feet high among the steel supports of the upper center of the huge building (as shown in the small picture at the right of this page) provided with a queen whose tendency has been to lay a very large excess of drone eggs. This colony is one that during the last fall took care of its drones as late as October. The interesting story of this experiment will be recorded in GLEANINGS from month to month as it proceeds—either to success or to final proof that the world hasn't yet an enclosure big enough and conditions right enough for indoor queen-rearing.

It is needless to say that no-queen breeder could afford to erect a $50,000 building such as is the great greenhouse where this experiment is being tried. The picture at the foot of this page (only part of which could be got within the camera's field) gives some idea of its size. On the next page will be found a picture of the interior of the greenhouse, but which shows a view only from the center to one end of the building and along only one of the six track paths beneath its roof. The small picture on the left of this page shows a part of the apiary attached to this greenhouse business and which has an important function to perform in pollinating the plants raised there. As before noted, the smaller picture on the right of this page shows the location of the colony on a platform 15 feet above the floor of the greenhouse, which is expected to furnish the drones that will (perhaps) mate with the virgins.



The experimental hive



A half-length view within the great greenhouse where the experiment of mating queens in confinement is now under way.

Beekeeping as a Side Line

Grace Allen

THIS, as its name indicates, is to be a department particularly for those to whom beekeeping is a sideline, be they enthusiastic beginners or discouraged ready-to-quitters, bee-lovers too busy about other things to have more than two or three hives under an apple tree to provide honey and delight of their presence, or skillful honey-producers who, unattracted by the thought of beekeeping as a means of livelihood, choose to limit their efforts to forty or fifty colonies in their own yards. Our interests will not be those of outyards and trucks and crews of helpers and carloads of honey and all the varied and distinct problems that these big efforts bring about, but they will be vital and absorbing to us, and we shall discuss them one by one.

* * *

Right now is the best season of the year for study, and there is a wealth of literature to choose from, books and journals and bulletins. Once the habit is formed, it keeps going of itself. The more you read, the more you know; the more you know, the more you want to know; the more you want to know, the more you read. So there you are, reading again. And in what good company!—doctors, ministers, lawyers, grocers, iron-workers, carpenters, farmers, teachers; always, everywhere, the successful ones are those who study most carefully and thoroly, and work most persistently and intelligently. Notice what Prof. Jager says, page 1067; " Beekeeping is a science, and a very deep and complicated one at that. Knowledge is power. It is also success and wealth."

In Champaign, Illinois, there lives a railroad man, a freight conductor named G. B Mays. For fifteen years Mr. Mays has been keeping bees as a sideline; and, as he has a gentle strain of Italians, he has no trouble with his neighbors. The picture shows his little yard during the honey-flow; at that time, Mr. Mays had twenty colonies and took off eleven hundred pounds of white-clover honey, but he has since increased to forty colonies. He is able to furnish honey to all the agents on his division. Mr. Mays is a reader and a constant student of bee books and journals, and therein probably lies the secret of his continued endeavor and success.

* * *

Another thing to be looked after in winter is the question of new supplies. And in its own way that is as much fun as working with the bees themselves. Don't, I pray you, wait till the last possible minute to order your hives, and then till another last possible minute to put them together. Decide early in the winter (if you did not in the fall) what you will need for next season, and, having decided, order; and having purchased, put together; for, of course, tho you be the veriest beginner, you are going to tackle that job yourself. I have heard of people who sent for the bee-supply agent or the state inspector to help work out the Chinese puzzle of hives and frames " in the flat." It is undeniably puzzling the first time, unless

The apiary from which a railroad man furnishes honey to the agents on his division.

" Close to his garden, close to his house, close to his neighbors."

you are a cabinet-maker or a genius. But that's part of the fun—something new to work out and master. Don't wail that you never can put all that kindling together. Read the directions—they are absolutely clear, and, together with the illustrations, will surely enable you to work it out. Those who have never yet done it have many a delightful evening ahead.

* * *

Mr. Geo. J. Trostle, of Sibley, Iowa, is a typical backlot beekeeper, tho he also has some bees out of town. See his row of hives, close to his garden, close to his house, close to his neighbors. Yet he has been fortunate in having his bees make no trouble. Sometimes the bee-neighbor problem has had to be worked out with some care, and we shall touch on that further in this department. Here is an interesting bit from Mr. Trostle's letter.

The pictures you will find inclosed are of myself and bees. The swarm is a second one of three-banded Italians. The row of hives are in my back yard. You can see by the picture how close they are to the garden. I live in town on one lot, with neighbors on all sides, but have had no trouble on account of the bees.

I have also some bees out of town. They will average about 80 to 100 lbs. per colony.

I have a glass hive with bees in, which I loaned to a grocer in town to use as an advertisement. He screened in his front window, covered the bottom with white-clover sod, and the sides with flowers. Then we placed the hive on the sod with the glass side to the street and let the bees out in the inclosed window. I lost a great many bees, but was willing to do what I could to advertise honey. The grocer said it greatly increased his sale of honey.

Sibley, Iowa. Geo. J. Trostle.

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That hive record of Mr. C. E. Fowler's, shown and explained on page 1071, is certainly ingenious and seemingly complete in its condensation. Many of the ideas are certainly either adoptable or adaptable. But it does look complicated and confusing. I know I should prefer initials or abbreviations to arbitrary numerals. For "eggs" why not " e " instead of " 1 "? " Larvæ," " capped larvae," " hatching larvae," could be " l," " cl," " hl," respectively. In one place on the record " 2 " means " larvae;" in other places it signifies two pounds of bees or two frames of either brood or honey, and in another place it refers to the first super, the second part of the hive, all of which seems like working the numerals overtime, making them act as arbitrary signs for certain words and phrases in addition to their own legitimate work of designating number. In some ways this record appeals to me strongly, and, with some changes to suit my personal preferences, it will probably inaugurate a change in my own records, which to date have possessed that particular virtue of generous detail especially possible to the backlotter with his smaller number of hives.

STRAY STRAWS

Dr. C. C. Miller

PLAN to go to the National convention at Madison. It's worth going to see and hear the genial president, Prof. Jager.

"MORE probably those who buy karo cannot afford to buy honey," p. 1106. Likely enough they think they cannot afford it. If, however, the poorest day-laborer were fully informed as to the *real food value* of honey, and its superiority over karo, he might think he could better afford honey than karo.

"THE RIPER the honey the less it will granulate," says P. C. Chadwick, p. 1112. Can you prove that, P. C.? I've always leaned to that belief, but never was entirely sure. [It has been generally believed that unripe honey will granulate quicker than ripe. We did not know there was any doubt on that point.—ED.]

R. F. HOLTERMANN, p. 1077, thinks that so far as lies in our power we should not let worker-bees have the chance to clean out larvæ diseased with European foul brood. I risk the guess that, after our tall friend has had a little longer acquaintance with the disease, he'll change his mind. I'd hardly think of having anything else done with the diseased larvæ.

M. S. PHILLIPPE writes: "Here is a remedy for those bothersome toads G. W. H. mentions, p. 1040. If the yard is so situated, he can dig a trench the width of a shovel and 20 to 24 inches deep around the apiary, and for a large apiary he can plow a deep furrow and finish to right depth with shovel." He says it works with Imperial Valley toads, two of which will fill a hat.

A REMARKABLE thing in U. S. Government report is 32.3 per cent of this year's honey crop being held for home use and local sale against 60.8 per cent last year, and 67.7 per cent sold to outside markets this year against 39.2 per cent last year. If no mistake in figures, that looks like progress in the wrong direction. [There must be some mistake. Our own investigations show that more honey was consumed in the United States this year than ever before in its history.—ED.]

SOME reasons are given, p. 1111, why brood disappears in the fall, and combs become solid slabs of honey. May be all right, but it looks a good deal to me as if by a gracious provision of nature my bees decide at a certain time that it's time brood must give way to preparation for winter. To be sure, with extracting-combs they don't act quite the same as with sections; but in that case I suppose they don't figure on having the extracting-comb taken away.

D. D. WHEDON, if you want a mill like mine write Quaker City Mill, Philadelphia, Pa., and ask price of mill F No. 4 (I think it's around $4.00). Use any good wheat, being sure it is dry. I find it easier to run merely enough so no grains go thru whole, and then running it thru fine. The flour doesn't keep well if ground many days ahead. The mill will grind any grain.

MARTEN MULDER writes from South Africa that a special contributor to *The Farmer's Weekly* advises to "divide the apiary into halves, the one half the strong hives and the other half the weak ones. Take all the brood from the weak hives and give it to the strong hives, when the harvest will be at least 50 to 100 per cent more." He quotes my book, and says this is called the "American Doubling-up System," and is universally practiced in America.

He's badly mixed, Marten. I strengthen first the strongest of those weak enough to need help, and, if necessary for that purpose, might draw brood from the weakest; but if I did I'd pay it back afterward with double interest, and bring *all* colonies up to full strength for the harvest.

MENTION was made, p. 1013, Nov. 1, of the plan of M. S. Phillippe to test the presence of a virgin by pinning a sealed queen-cell on sealed brood in the brood-nest, when if any kind of queen is present the cell will be destroyed in a few hours. The editor said, "Yes; but if one doesn't have a sealed queen-cell, what is he to do?" Well, there are always sealed cells to burn during the swarming season, and Mr. Phillippe says you can save these for future use, since "old cells are as good as new if kept unbroken." Likely enough the editor had in mind that a live occupant was needed in the cell; and a beekeeper at my elbow says, "A queen wouldn't tear a cell with a dead tenant." Don't be too sure of that. With a sealed queen-cell in a nursery I've often known the queen to dig holes in the side of the empty cell after emerging from it.

THE DIXIE BEE

Grace Allen

NORTH Carolina has Mr. Geo. H. Rea as beekeeping specialist, and now Tennessee has Mr. C. E. Bartholomew, formerly connected with the state experiment work of Iowa. Mr. Bartholomew's appointment is a co-operative arrangement between the United States Department of Agriculture, the State Department of Agriculture, and the University of Tennessee. His headquarters are at Knoxville, and he has already started on his work of education. He has been up in the mountain districts of Sevier and Sullivan counties in East Tennessee, looking over the situation, which he reports as needing to be looked over. It seems that the farmer beekeepers all over the state have been growing constantly fewer and fewer, and the total number of colonies in Tennessee is reported to have dwindled from 225,000 in 1900 to about half that many at the present time.

In our first interview Mr. Bartholomew surprised me with the statement that from such observations as he had made so far, he had decided that there weren't so many box-beekeepers in this state after all. I expressed my loyal delight, whereupon Mr. Bartholomew smiled and explained. "You see," he said, "most of the bees in the box hives have died out." So it seems his first work in the remote sections will be to induce the ex-beekeepers to get rid of the empty old boxes and "gums," and then to stock up with real bees in real hives.

At Nashville last week, Mr. Bartholomew addressed the Homemakers' Department of the Farmers' Institute, giving interesting information regarding the really great possibilities of beekeeping in Tennessee. This was followed with an address at Huntington, and on Saturday, Dec. 16, he will speak at Franklin before a gathering of farmers and beekeepers.

It is going to mean something for Tennessee to have Mr. Bartholomew here, and we are going to help it mean the most possible. We want to see the mountain beekeepers and those in remote districts enlightened, and we know the progressive beekeepers will keep constantly advancing, so as to be always in the fore front of modern apiculture. So we shall all be interested and open-minded, even tho Mr. Bartholomew does start right off, the first thing, on the subject of winter packing for that's what he's doing! At least, it is one of the things he is doing.

As soon as he got here, he went to studying weather reports, and he tells me that we have had as great daily variation as 45 degrees, and that during the winter months, as often as once every week comes a day with a variation of 25 degrees. Wherefore, reasons Mr. Bartholomew, there is no state where winter packing is more needed than in Tennessee! Well, it shall be our pride that we are open to conviction and education. We have been honest in thinking we didn't need special winter protection; some of us because we had been successful for thirty or forty years without packing; some of us because we had tried it and decided it didn't pay; and most of us because we had infinite faith in these others.

Knowing that Mr. E. G. Carr had seriously advocated winter cases for North Carolina, I wrote Mr. Bruce Anderson, of Forsyth County, asking about the results of winter packing there. He writes that very few colonies in his county were so packed last fall, and that equally strong colonies without packing stored as much surplus as those packed, but that last winter was very mild, and anyway "one season's experience is not sufficient to draw conclusions from." And that is true. So all the keepers of Dixie bees are going to be open-minded toward this winter-packing problem, consider it from all sides, and give it a fair trial, for we assuredly are not going to stand in our own light.

Mr. Bartholomew is an intelligent, up-to-date man, well informed and of practical experience. He seems in earnest about this work in Tennessee and evidently intends to give it his best efforts. He especially urges strong, active, local organizations, with frequent meetings and demonstrations. Surely, as Dr. Phillips says, work and co-operation will bring results.

* * *

Mr. Doolittle's figures on consumption of winter stores are interesting, and almost startling. We whose bees are in a mild climate, without packing, seem compelled to face the fact that they do consume a greater quantity of honey during the winter months than do those in the North where they are confined so much more steadily to the hive, particularly, of course, in the case of cellar-wintering.

NOTES FROM CANADA

J. L. Byer

THE weather to date, Dec. 16, has been fairly cold with an absence of high winds. About the middle of November we had a cold snap, and on one day the thermometer reached zero for a few hours. Then the weather moderated until a few days ago, and at the time of this writing we have had a few degrees zero on two mornings this week.

* * *

Bees had a partial flight one day late in November, and on Dec. 8 they again flew a little. Probably they will not have another flight till some time late in March. The stores in the hives are plentiful and appear to be of good quality, but the clusters are about the smallest on the average that we have ever experienced. For the next four months bees here in Ontario that are wintering outside are better off if let severely alone, as nothing can be done now to make up for any neglect earlier in the season. While the beekeepers are resting up for another year's labor, may the thousands and thousands of colonies of bees also resting come thru in real good shape and again provide work, and a living as well, to their many masters.

* * *

The Ontario convention is again a thing of the past. Space forbids me making more than a passing mention of the meeting. The attendance was good, but that is what we always expect and generally obtain at our meetings. Visitors from "over the line" included such well-known men as E. R. Root, C. P. Dadant, W. D. Achord, of Alabama, the well-known shipper of bees, and David Running, former president of the Michigan Association. O. L. Hershiser, of Buffalo, was with us of course; but then he is more a Canadian than anything else —at least his better half will qualify in that way, even if he himself qualifies as an American citizen. Reports from the members universally showed that a good crop had been harvested; but close inquiry failed to disclose any large amounts of honey still in hands of the beekeepers. Prospects for the province are not nearly as good as last year, in so far as next season's crop is concerned, altho many sections say that clover is fair.

The sessions were all well attended, and the discussions were featured with more than the usual amount of levity. Possibly the feature that was out of the ordinary as compared with meetings ten or more years ago was the time and interest taken up with questions concerning transportation with autos, auto trucks, etc. Judging by what one would see at the convention in this line, surely there are a lot of beekeepers in Ontario operating machines just now.

The officers elected for 1917 are the same as for 1916, and there are only a few changes in the directorate. While this meeting, in common with others like it, certainly is a source of information and benefit to all concerned, the writer was impressed with the thought expressed by so many that it is worth while attending such meetings for the social side, even if everything else were left out. We are inclined to agree with this idea; for any man left to himself, with no chance of interchanging ideas with others, will become self-centered and narrow. Meeting with others from all over the country from time to time is one of the best antidotes I know of to help overcome these infirmities.

* * *

Interesting reading to me is that report of the Illinois convention, page 1120, Dec. 1. Like the Dadants we use many large hives—even larger than their "barn." But when the statement is made that the ten-frame Quinby is large enough to keep most queens going, so that no excluder is necessary, then I dissent. Talking with Mr. Dadant at Toronto I came to the conclusion that it was a question of size of super that made the difference. They, the Dadants, use no excluders on their large hives, and practically no queens go above. I use a lot of still larger hives; and with no excluder 90 per cent or more of the queens go above. They use shallow supers, while I use deep supers—that must be the explanation. How easy to question another fellow's management and results, and then, after all, not be fully informed as to all details! I use 1½-inch spacing, and want nothing closer; but honestly I had never thought of this as being a help to prevent swarming. As we usually have but little swarming, I accept friend Latham's ideas on the subject, with pleasure. Convenience in handling frames, and better results in wintering, have been my only arguments in favor of the wider spacing; but now we have another "talking-point."

SIFTINGS

J. E. Crane

ONE hundred carloads of bottled honey already, Dec. 1, 1916—see page 1106. This may account for the length of time we have had to wait to get orders filled for glass.

* * *

While government reports show a larger crop of honey in 1916 than in the previous year, the sale of both comb and extracted honey, with us, has been better than in 1915.

* * *

We waited till Dec. 1 for the bees to get a late flight, and then had to cellar them without a fly. One hundred went in Dec. 1, and 30 more a week later. But I never knew bees to be as quiet as they are now.

* * *

Wesley Foster tells us, page 1014, Nov. 1, that cities in the middle West are taking honey in carlots, tho the population is not over 15,000. If all the population of the country were to take honey that way, how much would it take to supply the demand?

* * *

"In my opinion," says P. C. Chadwick, page 1112, Dec. 1, "a man cannot afford to feed bees, even at a difference in price of five cents per pound in favor of sugar." Well, now, that seems to be putting it pretty strong; but who can say he is not right?

* * *

"When a beekeeper loses hope it is equivalent to an apiary for sale, or the beginning of a rundown yard that no one would pay much for," says P. C. Chadwick, page 967, Oct. 15. Well, isn't it the beginning of the end in any kind of business?

* * *

Prof. Francis Jager, page 1067, Nov. 15, gives a sad commentary on beekeeping in the United States when he tells us that only one beekeeper in eight is familiar with the literature of beekeeping in this country. The truth of his statement can be vouched for by a number of inspectors.

* * *

Mr. Doolittle's experiments in finding the amount of honey indoors and outside are almost exactly the same as our own. My own figures, as I remember them, given in the December number of *The Beekeepers' Review*, were 10½ lbs. per colony for the cellar, and 17½ for those wintered outdoors. The article for the *Review* was written before I saw Mr. Doolittle's page in the Nov. 15th issue of GLEANINGS.

* * *

From page 1013, Nov. 1, I gather that Dr. Miller is still in trouble getting out frames or dummies. Say, doctor, why don't you use free hanging frames, just as Langstroth made them? It is my experience that it is not half the work to get out the first one that it is a Hoffman or Danzenbaker frame.

* * *

On page 1010, Nov. 1, attention is called to the value of early packing for bees left on their summer stands. Now I have to confess that we usually have so much to do in early autumn that we often leave our packing till rather late, and often find bunches of dead bees where they have become separated from the main cluster by a sudden change of temperature.

* * *

Mr. Holtermann's article, page 1076, Nov. 15, as to ways in which we may find out how European foul brood spreads, is well worth our attention. It is not probable any one beekeeper may be so situated as to be able to try them all; but one person may be able to try out one way and another another, and slowly we may learn much that is new.

* * *

A. C. Miller thinks I must be a rather slim beekeeper because I feed so much sugar, or at least he hints that way. See page 932, Oct. 1, and then he admits he has had to feed heavily some years when there was little late honey. Well, I will admit that I am not as good at beekeeping as I ought to be; but will our friend tell us what one is to do when there is little honey to be gathered after July 20? I have thought of running one or more, or a part of several yards for getting brood-combs filled solid with honey for giving to those run for section honey. Who can tell if it will pay better than running all for section honey and then feeding sugar for winter stores?

AMONG THE ROCKIES

Wesley Foster

DURING November 17½ inches of snow fell here in Boulder, and much more than that on the Front Range, thirty miles to the west and two miles up. The early snow is well packed; and as our soil is in excellent condition we cannot yet complain of prospects for next year.

* * *

Extracted honey has shown a good demand, and the prosperity of the farmers is quite a factor in this, here in the West. The farmers are getting the habit of buying in 60-lb. cans; and hundreds if not thousands of cans are sold in Colorado this way each year.

* * *

The writer has had a traveling man on the road, selling honey since the first of September. He is traveling in a Ford, and so far has made about five thousand miles. He has had some experiences selling honey in five states. Selling honey only, with no side line, takes pushing to make it go, especially when so many are underselling.

* * *

WHERE THE MONEY GOES.

The beekeepers go for the retailer and commission man, and see the great difference between what the producer gets and what the consumer pays, failing to see where all the expense comes in. Here are a few items to show where the money goes. We will call it the cost from the producer to retailer and will leave out the middleman this time. Using 60 lbs. of honey as a basis we will put it up in 5-lb. pails for the trade.

60 lbs. extracted honey at 7 cts.....	$4.20
Melting and heating honey........	.03
12 5-lb. friction-top pails at 6 cts...	.72
Labels for pails..................	.03
Box for shipping pails............	.16
Shipping honey to retailer........	.40
Cost of selling to retail trade 15 per cent	1.20
Loss in accounts, 2 per cent.......	.16
Average loss in leakage..........	.02
Cost of charging, billing, and collecting	.15
	$7.07
Selling price to retailer, $8.00.....	$8.00
	7.07
	$ .93

This leaves 93 cents for interest on money and all work in preparing honey and shipping. The beekeeper has, of course, the can left, which is worth something. Some are selling to retailers for less than $8.00 per dozen and some for more. When the retailer pays $8.00 a dozen he sells the 5-lb. pails for 90 cents to a dollar each. Then he charges the account, and may be he gets his money and may be doesn't.

Now, this picture is not very encouraging for either the beekeeper or the retailer; but let us see how the beekeeper can get more for his honey and the consumer pay less.

We will take 60 lbs. of honey and price it at $6.00 a can boxed ready for shipment by express or freight. We cultivate the farmer trade, because the farmer trade comes back year after year better than does the grocery trade. The farmer always pays cash and he pays the freight. The cost of selling to farmers is from five to ten per cent, or an average of 7½ per cent, which is, say, 45 cents a can, leaving $5.55 net for 60 lbs. of honey to the producer, and the honey costs the farmer $6.75 if he buys one can, and about $6.40 per can if he buys two cans. The producer gets 9 cents a pound net, and better for his extracted honey, and the consumer gets his honey for 10⅔ cts. to 11⅓ cts. per pound instead of 15 or 16 cents a pound in 5-lb. pails. Such a mail-order trade is slow building up, but when built it stays if your honey is right.

D. C. Polhemus, of Lamar, Colorado, operates about 2000 colonies of bees, and already this year has bought three cars of extracted and about a car of comb honey for his trade. This shows what may be done in building up a honey trade in a section of country not three hundred miles long by perhaps one hundred and fifty wide. The population will not exceed half a million, and he has competition too.

* * *

Some of us are fixed for quickly changing from comb to extracted honey production, but more of us are not. Can the beekeeper afford to change from one to the other as the markets fluctuate? Last year extracted honey sold for 3½ to 5 cts. a pound all over the West. This year the extracted-honey man has his inning, while the comb-honey producer is holding his crop. Where is the wisest counsel? What is a man to do when Christmas comes and all of his crop is still on his hands and no buyers? The man who criticises him for selling low gets the first brick.

FLORIDA SUNSHINE

E. G. Baldwin

SEVERAL beemen on the East Coast report over one super of honey per colony from basswood. Sit up and take notice, you apiarists of Wisconsin, Michigan, Ohio, and the linden regions generally! With all our other honeys we here in Florida can boast of supers of linden. What next?

* * *

A splendid sample of honey, a new sort, was sent me the other day from Key Biscayne, on East Coast. It came from the Hacienda apiaries, owned by Mr. Mathewson, a progressive orange-grower and beeman of no little note. The source of this honey is the cocoanut palm. Never before have I *seen* or sampled this honey. It is amber in hue, with a peculiar metallic glint—rather odd when viewed in a strong light. The flavor? Well, I gave samples to taste to many of my friends—some beemen, others not. All, with little hesitation, pronounced it hoarhound. And such is, indeed, the flavor—the after-taste more than at first. The body is thick, and all together it is a good honey, even for table use. Mr. Mathewson reports that the cocoanut palm is practically his only source of surplus; therefore we can be reasonably certain that this is a pure honey, true to name and source.

* * *

We have referred before to the Mexican or pinkvine (*Antigonon leptopus*) (see p. 970, Oct. 15, 1916). While it is an exotic, it grows wild if left to itself—that is, it will take care of itself after once being planted. Its long flowering clusters, racemes of pink blossoms, are a delight to the eye and to the bees that swarm on it from May to frost. We have always looked upon this plant as more of an ornament than a real asset to the surplus of the apiarist. But after several letters exchanged with a correspondent in Tampa, Fla., we received a large sample of honey from him which he asserts is from the pinkvine. His contention is that Tampa is full of this vine. That we know to be true; secondly, that it is about the only thing in bloom there for a month or two in midsummer; third, that he found his bees swarming on it all day long when he could trace them to no other source whatsoever. All this sounds plausible and reasonable. He declares, too, that he secured over one super of honey from one colony, that came entirely from this source, and it is from that super he sent us the sample referred to. Admittedly the honey received is all of one sort—that is, distinct in flavor, color, and body, and does not appear like a mixture. One who is acquainted with the distinct aster honey of eastern Kentucky would pronounce it at once aster. It is strikingly like that in color, body, and flavor—the latter most of all. We are interested to note that the special agent in charge of the agricultural experiment station, island of Guam, annual report for 1913, page 21, says, "Since the first colony of bees was obtained by this station in October, 1911, observations were made of some of the flowers from which honey was being collected. The cocoanut palm is one of the principal honey-producing plants of the island. Under favorable conditions this palm flowers almost continuously; and during the dry season, when few other honey-producing plants are in bloom, it furnishes practically all the honey furnished by the bees. The 'cadena de amor,' or chain-of-love vine (*Antigonon leptopus*), a beautiful flowering vine, is a fine honey-plant. Next spring when the vines come into flower again here we plan to make microscopical examination of pollen grains and compare them with those in this sample. We can then be sure whether or not the sample is mainly from the pinkvine. It is also called "rosa-de-montana."

* * *

Strangest of all comes the statement from a beekeeper of nearly 100 colonies on the St. John's River, to the effect that the spruce pine (*Pinus glabra*) yields not only pollen but also honey, and in large quantities! We were ready to believe that even dog-fennel would give honey if we had to admit that the spruce pine was a honey-yielder; but our informant, Mr. Shuman, asserts, with good show of proof, that his bees gathered most of his surplus after the orange flow, the past summer, from this source. Truly we know not much about the flora of our own state as yet! It is not from the blossom, which is inconspicuous and short-lived, but from the bases of the leaves—the petioles or needles—that the bees gather their sweets. Mr. Shuman examined the trees, and found the bees swarming, humming as in summer, about the needles at the points where they join the branch. The honey is fair.

IN CALIFORNIA

P. C. Chadwick

COMB honey, like other frail commodities, should be looked at with eyes and *not* with the fingers.

* * *

Extracting cold honey is not conducive to good morals.

* * *

Extracting too closely is worse than disease. Both together are forerunners of disaster.

* * *

Inyo County, along Owens River, produces comb honey that is not surpassed for color anywhere in the United States.

* * *

Doubling up weak colonies is like thinning fruit—it looks like a waste at the time, but gives more for the market.

* * *

Raising the average yield per colony should begin by raising the average condition before the honey-flow begins.

* * *

A fixed rule of management is not as applicable in this state as in the prairie states of the East. Here elevation is often of as much importance as any other consideration.

* * *

The inland foothill districts have an advantage over the coast district in that many of the coast fogs do not reach inland. The nights, however, get much colder from a lack of the ocean influence.

* * *

There is, perhaps, as great a variety of hives in California as anywhere in the Union. Standard hives will eventually be adopted almost exclusively, however, as the tendency is in that direction.

* * *

There is a crop of young beekeepers springing up here that remind me of the mushrooms in my father's old orchard after a warm spring rain. Some of them, I fear, are none too far advanced in the art to make the highest success possible.

* * *

My youngest son went out to sell some bulk comb honey. Later one of the neighbors to whom he had sold called up and wanted to know what that comb was in it for. He was used to extracted honey, and could see only useless bulk in the comb. I guess he was right too.

Rain visited almost the entire state on December 1 and 2, aiding vegetation greatly. The amount ranged from more than two inches at Santa Barbara to only a light fall in Redlands. The fall here reached only thirteen-hundredths of an inch, which was too small for any great value. It was the lightest here of any place reported, however.

* * *

There are some fine sage ranges along the coast in Monterey County that are said to be of little value on account of the heavy fog during the blooming season. I have it on good authority that two seasons ago bees were actually starving during the heavy blooming period of this plant on account of fog and bad weather.

* * *

The wealth of the California wild flowers cannot be imagined by one who has not seen them in their fullest glory. On a small space of soil may be found not only countless numbers, but almost countless varieties—not in a great entwined mass, but small plants, some of which are less than three inches high.

* * *

Perhaps the earliest springtime in California comes in the Coachella Valley. Bees begin work there early in January, on the cottonwood, and continue thruout the season. This valley is mostly far below the level of the sea. A paper published there known as the *Coachella Valley Submarine,* boasts of being the "lowest-down paper on earth."

* * *

Before the late John Muir died he was deploring the fact that automobiles were the means for careless persons to reach the great natural wild flower beds of the state. Instead of going out to pick or cut the bloom many were pulled up by the roots, thus destroying the future flowers. No greater lover of the wild flowers ever lived than Mr. Muir.

* * *

Eliminating old bees from queen-mating colonies is more important than may be suspected. The continual removing of mated queens before they have a chance to restock the colony allows the bees to reach an age not conducive to successful queen work. These old workers have cared for brood once, and have become rather averse to any condition that will force them into the business again. And a young stepmother does not seem to appeal to them very strongly either.

* * *

A correspondent says: "High noon on a hot day is the best time to examine a cross colony of bees." The best time for me to examine them is when I get *good and ready*. With a smoke, gloves, and veil I defy any colony to put me off until high noon. If a man does not protect himself from unnecessary stings he ought to be stung.

* * *

Wesley Foster, it is safe to spread brood here when the circle of bees extends out beyond the combs containing brood. This condition is not likely to happen unless the brood-chamber is inclined to be honey-bound. Spreading brood is a fine help at times; but I believe more harm is done by injudicious spreading than there is done thru knowledge of the art.

* * *

We shall have to take off our hats to Texas. They produce a big crop of bulk comb honey and sell most of it at home. That is more than California does; yet buyers often tell me that Texas is going to have an enormous crop. It does not worry me, however, any more, for I know that Texas is an empire within itself, largely consuming its own honey. The buyers cannot "get by" that.

* * *

Recently I noticed that the filaree by the roadside was dried up, except in one place where the initials of a person remained in green. A child had stopped to mark its initials in the dust, and the seed of the filaree had been covered a little deeper by this means. It had sprouted quickly, and was able to get rooted to a depth that gave it a little better chance to grow, and reach a little deeper for moisture.

* * *

Within our state we have both the garret and the cellar of our country. One may stand on the top of snow-capped Mt. Whitney, 14,500 ft. high, in July, and look down on the burning sands of Death Valley, nearly 300 ft. below the level of the sea. The contrast in temperature is great, as 140 degrees F. is not uncommon in Death Valley. All the variations of temperature are to be found between these two extremes.

Every once in a while I find a colony that is crosser than others, and some way they seem to get the honey in greater quantities than many of their more even-tempered neighbors. The reason is simple enough. They are active, alert, always looking out for something, even if it be nothing more than trouble. So this activity stands them "in good" when there is something doing among the flowers. Not all of the hustlers have bad tempers, however.

* * *

Mr. Harry Crawford, of Bloomfield, Colo., and Long Beach, Cal., called on me for a few hours recently. Harry has a nice home in Long Beach as well as a California bungalow at Bloomfield. He comes each winter to his Long Beach home to escape the cold. He is a successful comb-honey producer, having made an average of 110 pounds per colony on his Bloomfield locations this season. Real comb-honey producers are not very common in these parts, and it did me good to talk over that part of the business with him.

* * *

Mr. M. H. Mendleson, of Ventura, allows no handling of comb honey after sundown. Everything pertaining to it must be put away from any possibility of a moth reaching it after that time. He never fumigates, and never has any trouble with moth. There is not a man in the state who can command the price for good comb honey that he can. His reputation is established on merit of this kind. A few fancy grocers of Los Angeles are always ready to take his crop at top-notch prices, or a little more if he asks it.

* * *

The following correction slip accompanied the last Government crop report.

HONEY PRODUCTION 1916 AND 1915.

"The number of colonies at the spring count this year was estimated to be 2.8 per cent greater than shown by the spring count in 1915; which with the yields above shown indicate a total crop of honey 28.3 per cent greater than the crop of 1915.

"The reports indicate that the proportion of the present crop that is comb honey is 40.3 per cent, against 40 per cent last year. Extracted this year, 39.5 per cent, against 41.3, and bulk honey 20.2 per cent against 18.1 per cent last year. Of the total crop, 67.7 per cent is being held for home use and local sale, and 32.3 per cent as being sold to outside markets; the percentage last year was 60.8 per cent used locally, and 39.2 per cent sold to outside market."

IN TEXAS

THE conditions in Texas are different from those in most of the other states in the Union. Let us take, for instance, the honey crop for 1916. For at least three weeks it was a serious question as to whether or not the Texas beekeepers in general would get any surplus honey. Then suddenly the mesquite came into full bloom with an abundant yield, but with very little catclaw to be seen. This was due to the fact that mesquite requires very dry warm weather to yield nectar, while the catclaw is much like what is known as whitebrush, which requires frequent rains. The state being variably controlled by weather conditions, as a whole the year 1916 was the best for beekeepers in, possibly, 25 years. The yield was good, the quality excellent, the market demand brisk and the price several cents per pound better than the average of years. The bees, too, have gone into winter in good shape.

Aside from weather conditions, Texas beekeepers have two other very serious problems to cope with—namely, foul brood and the bee-moth. In some sections of the state foul brood is being handled to some extent, while in other sections little or no attention is paid to it, and it seems a hard matter to get the co-operation of the beekeepers along this line. However, during the year just past, according to State Entomologist Paddock, there were in the service twice as many inspectors as at any time in the history of the work. It may be assumed that the work will be prosecuted as vigorously as ever, and that conditions will improve materially.

The bee-moth is very destructive in this climate, owing to the warm weather; but this trouble could be dealt with very satisfactorily if the beekeepers were not quite so careless with their equipment. From personal observation in almost every case we found the moth was most prevalent where little interest was being taken in the equipment. Often what little honey the bees had stored (with little or no attention being given them) had been robbed.

Beekeepers in Texas, as well as in all other southern states, should remember that the bee-moth in the Southland does not have to encounter a winter freeze as it does in the North. A temperature below 32 degrees Fahrenheit, which always occurs in the northern states, will kill out both eggs and larvæ of the bee-moth, wherever left over. It is, therefore, necessary that the beekeepers of Texas be constantly on the alert during winter, watching all their combs that are not in hives with bees. Mr. S. P. Paddock has published State Agricultural College Bulletin No. 158—the best treatise on the bee-moth that has ever been published. Every Texas beekeeper should send and get it. Apply to College Station, Texas.

Swarming conditions in Texas are very different from those in some of the northern states. In Texas, swarming will be rampant during the fore part of the season, but will stop almost entirely as soon as the main honey-flow is under way. Whether this is due to the fact that the queen is "honey-bound," and therefore cannot supply the hive with a lot of emerging brood, or whether the bees are too busy to think about swarming, is not easy to determine.

In all probability the same conditions that stop swarming in Texas will also stop swarming in the northern states. But such conditions in the North are seldom or never the same. The late W. Z. Hutchinson once made the remark that a very heavy honey-flow would check swarming in the North as well as in the South, and probably he was right.

The beekeepers of Texas should realize that, all things considered, they have one of the best states for honey production, and as good a chance as any for obtaining a fair price for their product; and the sooner they look upon their bees as an investment and not as a "white elephant," the better will conditions be with them.

Texas is proud of the fact that it is the largest state in the Union. The United States Census Bureau has more than once credited it with having produced the largest amount of honey, and this is probably true. The seasons are long and the honey-flow varied. Were it not for occasional severe drouths Texas would probably be always in the lead.

Texas has an immense amount of undeveloped territory, much of it arid; but most of it can be reclaimed by irrigation. It has a bright future, because the time will come when its tillable land will be developed to a much greater extent than now. It should be borne in mind that much of the area of Texas is new and hence there is room for more northern development.

BEGINNERS' LESSONS

H. H. Root

JUST as a teacher, before taking up the first lesson of a new study, gives a talk on the work before the class, so I want to discuss briefly the general subject of beekeeping before we take up our first lesson proper which will be in the February number of GLEANINGS. In this talk I wish to give the beginner in beekeeping some notion of what reward his work promises, what he must endeavor to do to win success, and what natural traits he should possess or cultivate in order to get the most—in honey, money, and pleasure—out of the beekeeping business.

The rewards that may be promised the faithful and intelligent beekeeper are as certain as those of many professions and better than most, for to the promise of profit is added that of pleasure and health. As for financial profit, Dr. E. F. Phillips, in charge of bee-culture investigations for the United States Department of Agriculture, says that in an average locality the bees may be made to pay for themselves almost from the start, and for the additional apparatus needed in increasing the apiary, as well as show some profit besides. Dr. Phillips further states that the annual crop of honey in the United States amounts to at least $20,000,000 and the beeswax to $2,000,000 more. This vast amount is distributed among many beekeepers—not equally, for there are lean years and fat years in different localities, much depending on varying conditions of weather and plant life; on the conditions of health and vigor within the hive; on the market and selling methods. To sum up conservatively this question of financial profit, I would say that the successful beekeeper is well paid in money alone for the time he spends in his work, and there is no other branch of agriculture which can be made to yield as great a return on so small an investment as beekeeping.

The pleasures of beekeeping are to be accounted one of its greatest profits, especially in the case of the man or woman, boy or girl, who engages in it as a side line or as a recreation. There is a fascination in the study of bees that creates an absorbing interest in the little insect which has ever aroused the curiosity of mankind. Beekeeping gives a wonderful insight into the field of nature (particularly the insect world) that brings one in contact not only with the bees and all their wonderful habits but into the realm of plant life, a large part of which is dependent on the work of the bees. The study of bees leads on to the study of floriculture and horticulture that opens up a whole new world of wonder. So, for the professional or literary man, grilled and ground by the monotonous cares of the day, beekeeping offers a new lease and a longer length of life.

That health accompanies this outdoor work of love and interest is as certain as that light accompanies the break of day.

Who should be a beekeeper? It is an occupation for old or young, rich or poor. It is for the professional man or woman, tired and worn with office work, and it is for the vigorous man in his prime who seeks profit and pleasure alike from its pursuit. Any person, with fair health and strength, studious, and imbued with some patience and some love of nature, may very reasonably hope to become successful as a beekeeper. The more one studies and the more one observes and is able to apply his observations practically, the more successful beekeeper he will be. He should be, too, a reader of bee lore and natural history. The greater and the wider the beekeeper's intelligence, the greater his success will be. The very few persons who may despair of becoming good beekeepers are such as have unusually nervous temperaments, little patience, and little or no love for the outdoors and natural history; and the still fewer who are seriously affected by the poison of bee-stings and stand in constant dread of them. The normal person, with a little care, can avoid stings almost entirely and need have no cause to dread them.

There is another important essential to winning success in beekeeping. It is the trait of applying knowledge promptly, and doing the right thing at the right time.

Most of all, I wish to say to the beginner that, while he has considerable to do to succeed, yet if he be willing to try earnestly he may certainly expect to acquire mastery of a profession that will yield not only honey and money but a world of new interest, full of pleasure and wonder, and which will prove a great aid to health.

With these introductory remarks I will start the regular lessons for beginners in the February number of GLEANINGS.

GLEANED BY ASKING

E. R. Root

R. H. T., Port Ewen, N. Y.— How much does a solid Hoffman frame of honey weigh?

A. It is pretty hard to give a definite figure. Even if the frames are crowded tightly together, there is considerable difference between the thickness of the combs, in the lower half at least, and in the amount of honey contained. Five or six pounds would be somewhere near the average. If the frames were spaced wide for extracting, the weight would be much greater—nearly double in fact.

A. H., Owego, N. Y.—How many quarts of bees are there in one pound?

A. Bees vary in weight considerably. The average number of bees in a pound is usually given as 4800. A quart contains about 3200. Therefore there are approximately 1½ quarts of bees in a pound.

V. W. M., Charlevoix, Mich. Last winter was an unusually long one. The temperature in our bee-cellar was too low (only 32 degrees Fahrenheit) until after April. This year I have the temperature at 44 degrees. All except one colony lived thru last winter and had honey in the combs in the spring but they were all weak. The queens in several colonies died later. Is this present temperature of 44 degrees all right?

A. It is a wonder that the bees wintered as well as they did. The cellar must have been very dry. The combination of a damp atmosphere and a low temperature makes trouble. A low temperature, if the atmosphere is dry, does not do as much harm; but it is far better, of course, to have a higher temperature, say 50 degrees. This is probably better than 44; but at the higher temperature there must be plenty of ventilation.

L. D. M., Winder, Ga.—1. I can buy bees in box hives at $1.50 a colony. I get 15 cts. a pound for extracted honey in quart fruit-jars. I have only eight colonies now, and would like to have more. Will it pay me to buy such colonies, or had I better increase what I have?

2. Can I put four box hives close together and in the spring, when the weather is warm, move them all away some distance and put one new hive on the same stand occupied by the four with one or two frames of brood to catch the field bees? Can I get a good strong colony by this plan? If it would work I would like to repeat the operation several times during the summer, and then in the late fall unite the few bees left in the box hives.

A. 1. This is a question that can not be settled for all conditions. If a beekeeper has to buy sugar at a high price in order to furnish artificial feed for making the increase, the box-hive proposition at $1.50 per colony is undoubtedly the best, provided, of course, that the colonies in box hives are known to be absolutely free from any disease. It does not pay to accept disease at any price.

On the other hand, if the conditions are such that early in the season, before the main honey-flow begins, there is a prolonged period when the bees are gathering honey slowly, making an ideal condition for brood-rearing and increase, it probably would not pay to bother with the box-hive colonies.

2. Your plan of collecting field bees from four box hives would make a large cluster of bees. While such a colony would be deficient in young nurse bees until the brood supplied had hatched, the old bees would perform this function for a time.

It would be a good plan to supply more than two combs of brood. Probably it would be simpler and more satisfactory in the end to drum the bees out of the box hives, as many as you can, including the queen. That is, actually to transfer by what is known as the Heddon short method, rather than to rely upon the plan you refer to, catching the field bees and the few young bees that might happen to be flying at the time.

L. B., Poplar Bluff, Mo. Upon examination of my bees one warm day I found one hive where the bees were flying around the entrance as tho it were springtime. On looking closer I found that they were dragging out dead bees—and there are many yellow-looking crumbs. There was quite a pile of dead bees on the floor, and hundreds of them were on the ground in front. I am a beginner and would like to know what the trouble is.

A. The yellow-looking crumbs referred to are bits of cappings, particles of comb, and pollen dust. If there was unusual excitement at the entrance of this hive on that warm day, and if the bees were fighting, it is more than likely that the colony, being weak, with a good supply of honey, and an entrance perhaps too large, was being robbed out by another colony. Under such conditions there would be a large amount of this granular substance on the floor-board of the hive, indicating the gnawed cappings. The uproar in front of the entrance, the pile of dead bees on the floor, and the dead bees outside, would point toward a case of robbing.

The bees may have been having merely a playspell. If this were just after cool or cold weather for a week or two you would find just exactly what you describe—dead bees being carried out as well as a demonstration at the entrance.

JUST NEWS

Editors

ON account of the number of conventions we attended in December it will be impossible to give even a digest of some of the good papers and discussions that were given. Our notes of even one meeting would take all the space we could afford to give in a single issue; and therefore all we can do will be to touch on a few of the high spots in the beekeepers' conventions held at Chicago, Des Moines, Madison and Toronto in early December.

RADICALLY DIFFERENT METHODS.

At practically all of the conventions the subjects of comb and extracted honey, marketing, swarm control, and wintering occupied no little part of the time. If a beginner were to take in all of these meetings he would be utterly confused because the methods employed by different successful beekeepers were so radically different.

DISCOURAGE SWARMING.

Some producers, particularly the Dadants, do everything they can to discourage swarming, and run for extracted honey. They do not pay any attention to cell-killing, but simply provide their bees with large hives, abundant ventilation and shade, a large amount of super room, and let the bees take care of themselves until the crop is ready to harvest. Another set of producers could not and would not use the Dadant methods.

ENCOURAGE SWARMING.

They encourage swarming. One of the largest producers, Mr. Frank Coverdale, of Delmar, Iowa, had furious swarming, but he produces immense crops of comb honey. He could not be coaxed to adopt the Dadant system. Other producers running for comb honey discourage swarming; still others dequeen, and secure big crops of honey from their queenless colonies which, of course, will not swarm. They are compelled to cut out cells in seven or eight days after dequeening.

TWO BROOD-CHAMBERS FOR BREEDING.

At one or two of the conventions two or three said they secured practically the same results as the Dadants by using two brood-chambers for the queen in the early part of the season. A good queen would have, therefore, unlimited range. Within about a week of the expected honey-flow all the unsealed brood and eggs are put in the lower story, and the sealed and hatching brood in the upper story. A queen-excluder is placed between, with the queen below. As the hatching brood emerges in the upper story there will be empty cells for the storage of honey as it comes in. Automatically more cells are made available by brood hatching. In the course of about ten days or two weeks most of the brood will have hatched out, and the cells which it occupied will be filled with honey. Then an upper story is added. By this plan it was argued the queen could have unlimited egg-laying room as long as it was necessary to have breeding, with the advantage of using a standard hive, and having something that one man can easily lift.

MARKETING.

In regard to the matter of marketing, there was as great a diversity of opinions and methods. One class of beekeepers sell around home and dispose of their entire crop. Some of these do not look with very much favor on the large bottler who invades their territory, and they feel he ought to keep out.

Another class of beekeepers sell around home and after the local markets are supplied they dispose of the rest of the crop to large buyers of honey. Still another class job their entire crop, feeling it is far more profitable to devote their time and energies to production, preparing for the next year's season, than to waste their time and energies in trying to do what they do not know how to do.

BEEKEEPERS CUTTING PRICES.

At all of the conventions there seemed to be an undercurrent of feeling that beekeepers as a class are jealous of each other, and they are, therefore, competitors. In some cases it was pointed out how local beekeepers were cutting and slashing prices, even selling at retail below actual jobbing prices. Any amount of proof was given to show that this thing is going on in many localities, to the great detriment of the industry at large. Small producers help to establish low prices on honey. They do not know what the market is or should be, and so they will set the pace by selling their honey for whatever the dealer will pay—often as low as 6 cents for fine extracted honey. Then they will turn around and sell as low as 6 cents to a retail consumer who comes to the door. This whole matter naturally stirred up considerable discussion along the line of co-operation. The largest and best producers believed that something should be done to buy up the crops of these small producers, or at least come in touch with them and show them the folly of selling at too low a figure when good prices could just as easily be secured.

PEDDLING 46,000 LBS. AT 11 CENTS

One large producer who sold a crop of 46,000 lbs. actually retailed and peddled his clover honey in 5-lb. pails, lithographed in colors, at 65 cts. a pail. One other producer was criticised for selling his honey as low as 85 cts. in 5-lb. pails. It is evident that the man who gets 65 cts., paying 10 cts. for his pail, gets only 55 cts. for 5 lbs. of honey *at retail.* But he is a successful beekeeper, and sells his crop because he is a natural salesman. But these prices at retail have a tendency to bring down the price of all honey.

TOO MUCH WINTER PACKING.

There was about as large a diversity of opinion in the matter of wintering. Some held that it is better to winter indoors, others outdoors without much packing. Some would go to the extreme of having excessive packing, arguing that they would save stores thereby. If the experiments conducted at the Bureau of Entomology are of any value it is apparent that too much packing cannot be used. The limit will be set by the cost of the winter cases.

RENDERING UP OLD COMBS INTO WAX.

This question received more than ordinary attention at the Ontario convention. While many were still using the solar wax-extractor, the majority were using artificial heat in connection with some form of press. The tendency seemed to be strongly toward the hot-water method as used by O. L. Hershiser and H. B. Sibbald. Mr. Hershiser, when called to the floor, strongly urged the importance of *boiling* water and of alternately raising and lowering the screws, repeating the process until the slumgum is washed nearly clean, for it was a process of washing as well as squeezing. He felt that water *constantly* boiling was much more effective than water that had been brought merely to the boiling-point.

He had been able, he said, to get anywhere from 7 to 8 per cent of wax out of ordinary slumgum which he had bought of beekeepers, and which they believed was perfectly free of wax. This fact alone proved to him that, ordinarily, beekeepers who burn up their slumgum are burning up thousands of pounds of wax.

Mr. Hershiser is always on the market for slumgum, because by his process and method he can make a good thing by giving it a further cleaning.

EXTENSION WORK IN THE SOUTH

One of the addresses delivered at most of the conventions was one by Dr. E. F. Phillips, of the Bureau of Entomology, on extension work in beekeeping. He pointed out that the books and journals devoted to bee culture were not reaching a large class of persons who keep a few bees. The schools and colleges that offered courses in beekeeping reached only a few. Bulletins and circulars were not the most effective method of teaching. Apiary inspection was the most effective instrument for teaching bee culture among the class who were not reached by other means. Considering the fact that only about one-twentieth of the nectar in the country was gathered, and the further fact that the market was not able to supply the demand, there was need of more and better beekeepers. Some objected to any kind of instruction work whereby there will be more producers in the field. It was, he said, somewhat difficult at times to have patience with such objectors; for practical experience showed there was no such thing as overproduction. The overwhelming argument against the making of more and better beekeepers was the fact that beekeeping has scarcely as yet established itself as a branch of American agriculture. Present crops are inadequate to make honey a staple market article.

Among the agencies for extending proper methods of handling bees among a class not reached by other means was extension work, both state and national. The last session of congress made an increase of $5000 for extension work. Under the civil-service law, candidates were examined and appointments made. Three men he said were now in the field in the South, working on a co-operative plan with the Department of Agriculture of the several states where they are working. By confining this extension work to this region there was all the work that the three men can do.

The people in the South were responsive to this class of work, and, moreover, they needed it. Under the present appropriation no more men could be put in the field. But even as it was, some results were being secured. Extension workers in connection with men already in the field employed by the state were giving bee demonstrations, showing how to handle bees, and how to know and cure bee diseases; and when it was remembered that there were more bees in the southeastern part of the United States than anywhere else in the country it could be seen that the field was large. It was very important at this stage of the game that a knowledge should be had of bee diseases among a class who were not and could not be reached by means of printed matter.

CO-OPERATION

Prof. Francis Jager spoke on the subject of co-operation among beekeepers. He has a plan which, in connection with the National Beekeepers' Association, ought to bring results. Among other things he said that Dr. C. C. Miller was right when he said in Chicago last February that the National Beekeepers' Association was a valuable asset with immense possibilities to do good to the beekeepers of the country. The National was the only existing agency able to pull the beekeeping industry out of the rut. We might be able to deceive ourselves that we were accomplishing wonderful things; but the facts, however, proved just the contrary. Honey today was the cheapest food on the market, altho the demand for it had never been greater. We were underselling each other, altho the demand for honey was many times greater than the supply. A nation-wide organization was needed to bring order out of this chaos. There were far-reaching problems which only the National organization could attempt to solve. For instance, obtaining State and Government aid for the instruction and organization of beekeepers, to get a correct census of the bee industry in 1920, to adjust the freight and express rates on honey, to protect ourselves against the substitutes for honey which are driving us out of the American market under the name of honey syrups, "better and cheaper than honey" glucose, honey adulterated with five or more per cent water, etc.; and the item of supply and demand of overproduction was still a closed book to the American honey-producer. The standards of packing and shipping, the uniform containers for extracted honey, the imports and exports of honey, the gathering of honey statistics by the government Bureau of Crop Reports, and a judicial distribution of the same, thereby fixing the right price for honey, advertising of honey, also the increase in the production and consumption of honey, and innumerable other matters, would, he said, be discussed at the National beekeepers' meeting in Madison next February. While many beekeepers did not take much stock in what was being planned, they could not but admit that something along the lines outlined must be done soon and somewhere by somebody. There was no doubt in his mind that the National, once she would find herself, would become the agency for the advancement of beekeeping, and the day was not far off when it would be considered an honor and a privilege to be a member of it.

"TIN LIZZIES" AND TRAILERS.

At several of the conventions the value of a small motor truck for carrying supplies and men to the yards was emphasized. It was remarkable how many have been using with satisfaction the little "tin Lizzies," otherwise called the Fords. The user of one said they might poke fun at them all they might, but added, "They got there." And, what was more, the cost of maintainance and care was very low. He said he used in connection with them trailers with either two or four wheels, the latter being preferred. One man went so far as to say he had carried a ton of honey on a trailer, a thousand pounds on the Lizzie itself, and two men and three boys.

Since the advent of cheap and serviceable automobiles the whole method of managing outyards had been modified. Bees were being kept at more remote points, and not so many in a yard, avoiding overstocking. For this purpose the little Lizzie with or without a trailer was reported a great success.

For a trailer some used, for want of something better, an ordinary light spring wagon with high wheels. Others felt that it was a little better to use rubber-tired machines, especially those with pneumatics. It was considered advisable to use springs, and straps to keep the springs from jumping up too high. An ordinary light spring wagon was not suited for a 20 or 25 mile run over ordinary roads. At those speeds when it struck a chuckhole something was liable to happen.

THE QUESTION-BOX

At some of the conventions the question-box was almost a joke because it was made up of questions that a beginner would naturally ask, and which are covered in all the standard text-books. At other conventions the question-box was certainly a valuable and useful feature—an excellent filling between the papers and the more serious discussions.

Some of the most helpful things we have ever picked up at a convention came thru the avenue of the question-box. It transpires, then, that the question-box should be handled by an expert, as it was in most cases, who will give out only questions the discussion of which is worth hearing by one who has come a hundred miles or so, and is paying hotel expenses.

THE BETWEEN-SESSION TALKS

The between-sessions man-to-man talks, as they always are, were particularly valuable in this chain of conventions; and in a general way we may say the conventions that have just closed were some of the best we have attended. The crop has been large. The attendance at most of the meetings was very much above the average, and the enthusiasm the best.

BANQUETS AT BEE CONVENTIONS.

At three of the conventions in the chain of meetings, banquets were held—first at the Michigan convention at the close of the second day, as mentioned on page 1176 of our Dec. 15th issue; second, at the Iowa convention at the noon hour. This was served in the dining-room of the Chamber of Commerce, at which Governor Clark, Mayor MacVicar, Secretary of the School Board Clinite, State Superintendent of Schools Devoe, and City Chemist Harrison were guests of honor. The latter gave a talk on the food value of honey, bringing out some interesting comparisons showing honey to be highly nutritious, and, compared with a large list of other foods, to be cheaper when the nutritive value is considered.

Thru an arrangement with the Chamber of Commerce, honey and biscuits were served to all the patrons of the Chamber dining-room on that day.

Just preceding the banquet, thru the efforts of Miss Belle Mc Connell about 124 pupils from Irving school sang a couple of bee songs that "brought down the house." The children were then each presented with a jar of honey, the gift of the A. I. Root Company's branch at Des Moines.

The last banquet which was largely patronized was held in the dining-room of Hotel Carls-Rite, Toronto, Can., on the evening of the second day. No toasts were offered after dinner, but all assembled in the convention room where a lantern-slide talk by former Sec. Wm. Couse, of Stroutville, Ontario, was given. The speaker, one of the early founders of the organization, knew intimately all the men who had to do with the making of the Ontario Beekeepers' Association. He was particularly happy in his personal references to each member whose picture was thrown on the wall Among others he paid a glowing tribute to D. A. Jones the one who, at one time, was the leading beekeeper of Canada. He related a number of interesting incidents connected with the life of that remarkable man—one who saw the funny as well as the serious side of life. Notwithstanding this lecture lasted over two hours, it was listened to most attentively clear thru, often calling forth applause after applause.

* * *

THE NEW TEXAS BEE JOURNAL

Vol. I. No. 1 of *The Texas Beekeepers' Item,* edited and published monthly by Louis H. Scholl, New Braunfels, Texas, has reached us. The price is 50 cents per annum. As announced in our previous issue, it is more in the nature of a small newspaper of four pages than a journal. In fact, it says of itself that it is "to be a newspaper for beekeepers. In this the *Beekeepers' Item* will be in a separate class." Mr. Scholl is no stranger to the beekeeping public, and as a writer of bee-lore he has had not a little experience.

Texas is a very large field in itself, to say nothing of the great expanse of territory in the Southwest. The conditions in the Lone Star State are somewhat different from what we have in the northern states, and somewhat different from those in some of the southern states; so it is felt that there is a field for the new paper. We not only welcome it among our exchanges, but wish it a Happy New Year and many more of them.

* * *

The short-course in beekeeping at the Ontario Agricultural College will be held Jan. 9 to Jan. 27. A copy of the attrative program for this course can be had by writing to Mr. Morley Pettit, Provincial Apiarist, O. A. College, Guelph, Ont.

* * *

Dr. E. F. Phillips of Washington, D. C., and E. R. Root of Medina, Ohio, expect to attend the convention of the beekeepers of North Carolina on Jan. 11th in Board of Trade Hall, Winstom-Salem, N. C.

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The Ohio state beekeepers' convention will be held at Columbus, Feb. 1 and 2, 1917, during farmers' week, at the College of Agriculture, Ohio State University.

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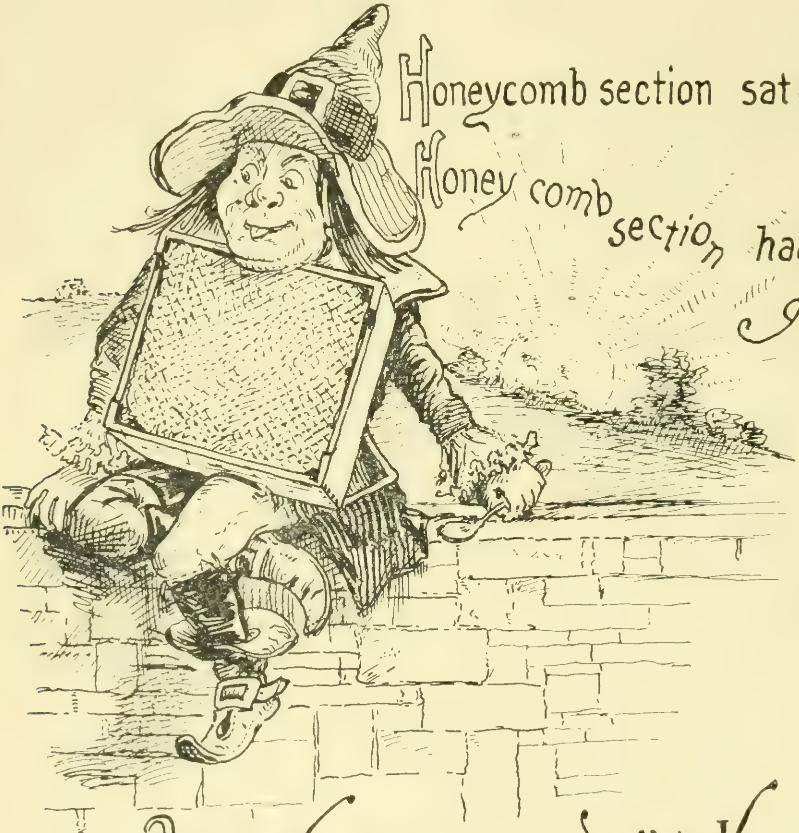
The next meeting of the National Beekeepers' Association will be held at Madison, Wis., Feb. 6, 7, 8. See editorials and Convention Notices.

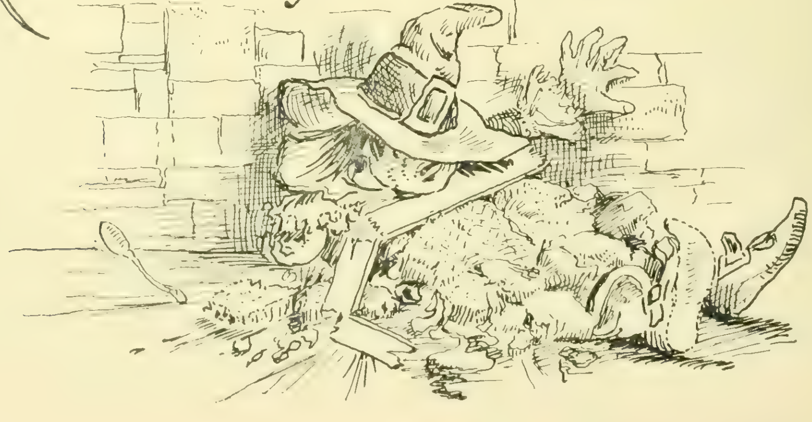
Mother Bee NURSERY RHYMES

By M.G.P. (Mother Goose Plagiarized.)



Honeycomb section sat on a Wall;
Honey comb section had a great fall;

All the King's horses and all the King's men,
Could'nt put honey in sections again.!



HEADS OF GRAIN FROM DIFFERENT FIELDS

Winter and the New Year*

BY GRACE ALLEN

Such rest is here, and peace, and quiet breath,
I scarcely know if this be sleep or death.
There is no sign of anything alive,
So solemn and so still is every hive.
No murmur here, no eager flash of wing
That thru the summer made our hearts to sing,
But every hive is still as some old tomb
Of desolate dead dreams and withered bloom.

The earth itself is white and still and cold
And either dead or very, very old.
This bare dry twig was once a leafy vine
Whose sap went mounting like some racy wine
That somehow made a miracle of green.
Is this, then, all the miracle shall mean,
This brown, unlovely, lifeless-looking thing?
If so, why should we ever smile or sing?

Yet smile we shall, and sing, because we know
A brave New Year is coming o'er the snow,
A fair New Year to wake the earth from sleep,
And heal, perhaps, the hurt of hearts that weep.
And all life's ancient gifts this year shall bring,
Of youth, and hope, and bees that hum in spring;
And strange new beauties never known before.
And some year shall bring peace forevermore.

* See Cover picture

* * *

Late Cell and Comb Building You will be interested to know that an observation hive of bees shipped here from Medina started a queen-cell, and after the cell was sealed I took the hive clear across the city on a surface car and still it hatched. I put it in a hive of bees on the roof of our building here where I am handling some bees for your Chicago retail displays. As a queen-breeder I consider this rather remarkable, for not the least of my trouble is to get cells to hatch when they have been handled a little roughly. If you know anything about Chicago surface lines you know what a nice smooth ride they had.

I noticed in the Oct. 1st Gleanings Dr. Miller says bees "will build it as late as they can gather any surplus providing they need it for stores." Speaking of comb, if I had you and Dr. Miller here on the roof I could show you comb one-half Hoffman size hanging from an inner cover, and built during the past week when there were no days when bees could fly. Part of the bees have been taken out in observation hives, and the rest remaining in the hive built the comb when they were unable to secure any outside honey at all, let alone storing surplus, and when they could scarcely cover the remainder of the frames in the hive. After Dr. Miller is hit like that I imagine he will smile and say "locality."

Kennith Hawkins.

Plainfield, Ill., Oct. 12.

[While the condition is a little unusual, yet we are prepared nowadays to expect almost anything. If we were to try to bring about this result of getting a cell that would hatch in this way, we should have to try a good many times before we succeeded.

With regard to the comb built from a cover, we know that bees will sometimes build comb this way between two brood-combs, when a space is left between; but we never knew them at the time of the year of which you speak to build combs outside of the brood-nest—that is, on the outside of the outside combs.—Ed.]

* * *

My Plan of Getting Rid of Laying Workers I never have the least trouble in getting rid of these pests. I use only the old process of removing the whole colony to a spot 30 or 40 yards away, shaking out all the bees, and returning the hive and combs to the old stand, leaving the bees to find their way back as best they can. I shake on to a sheet, because sometimes the bees have an old queen that has become a drone-layer. I always leave in the hive any brood that the bees may have, then give one good comb of worker brood, which I place in the center.

I do not recall a failure by this plan. The theory is that a drone-layer never goes outside the hive, and consequently will not know her way back to it if taken some little distance away and shaken out on to the ground. My experience proves that this theory is correct.

Major Shallard.

S. Woodburn, N. S. W., Australia.

* * *

Why the Minerals in Honey Are Valuable In the diagram showing the chemical composition of honey, p. 1010, Dec. 15, 1915, is undetermined matter — iron, lime, sodium, sulphur, magnesium, potassium, manganese, phosphoric acid, and so on. These minerals and salts are all found in the human body, and are obtained from the food we eat. If they are obtained of the apothecary, and taken in the inorganic state, they are not assimilated. They are injurious. The only way these minerals and salts can be assimilated by the human system is in the food we eat. Doctors' prescriptions cannot supply a deficiency in these elements. They must be obtained in our food. Honey is the only natural sweet. Even maple sugar is prepared by boiling. White sugar has been clarified until these salts are eliminated. These salts and minerals and other very volatile substances are found only in their proper proportion, and so they can be assimilated in honey, fruits, nuts, vegetables, and such foods as may be eaten in their uncooked state. Eugene Christian's book on food chemistry explains these matters very clearly and fully.

Halley, Colo., Oct. 24. C. Stimson.

* * *

Treatment for the Two Brood Diseases

My husband kept bees for fifteen years. Two years ago he died. Foul brood bothered him more or less all the time. This spring I hired a beeman from California. He claimed to be an expert. You know bees in our locality have been in a bad condition. This spring half of them were dead. Some claimed that sour honey was the cause of it. The man used all clean combs, and cut out all foul-brood colonies. Over and over again he exposed them to strong sulphur fumes. Well, the man left about a month ago; and while going thru the bees putting them into winter quarters I found a new disease. Some colonies again are foul. Black brood is present—both kinds. Do you think sulphur is a sure cure? We always destroyed every comb from the ones that had American foul brood, burned the hives out with a torch, and boiled the frames.

If you run combs thru the extractor with brood in, will it kill or dislodge the brood? Will honey that is only half capped when extracted sour or ferment? He ran for extracted honey only, and worked it that way. He never used an excluder, and extracted when the combs were only partly capped over. My husband raised only comb honey, and had good crops in this locality.

If we had a foul-brood inspector in this part of the country it would help us much. We had hardly half a crop this year—all clover with a little fireweed honey. It rained too much thru the summer; but the bees gathered lots of honey later; but the most of it is strong. Subscriber.

Oak Point, Wash., Oct. 16.

[It is probable that you had among your bees both American and European foul brood. Some call the latter black brood.

Sulphur would be of little value in disinfecting the combs. In the case of American foul brood the combs must be melted up and the frames burned, the hives scalded or burned out on the inside before they could be used again. With the European foul brood the case is a little different. The treatment consists in keeping the colony queenless for ten days and then requeening. The process may have to be repeated; but when a new queen is put in, it must be an Italian queen of resistant strain.

It is possible to extract from combs containing brood; but where it is unsealed some of the young brood will be thrown out with the honey, and it will be scattered all thru. It is usually not advisable to extract from brood-combs, on this account. Honey that has been half capped over may or may not sour when extracted. It depends upon the climate and the kind of honey. Some honeys can be extracted when only parts of the combs are capped over. Others should be capped over entirely before being run thru the extractor.—Ed.]

* * *

Preventing Wires from Sinking into End-bars

A year ago some one recommended that in nailing a frame one of the nails thru the upper end of the end-bar into the top-bar and also the one thru the bottom-bar up into the end-bar be not driven quite home at first, but that the ends of the wire when wiring be fastened by winding round these nails and then the nails driven home. I suppose the idea was to save the time taken in picking up and driving two three-ounce tacks; but I have discovered in trying the plan that some time is lost in extra "fiddling" of the wires; besides, the wires are not likely to be as tight as they should be. I took two frames and wired one exactly in accordance with these directions, the other the same except that the ends of the wires were fastened to three-ounce tacks driven at the sides of the holes, so that the wire from the holes to the tacks ran at right angles to the grain instead of with the grain. Then I tried the "tune" of the wires and found that they were tighter on the frame where they were fastened to the nails, as was shown by the higher pitch of the middle wires on that frame, but that, nevertheless, the top and bottom wires, which felt the influence of the way of fastening, were a trifle slacker on that frame than on the one with the tacks.

The difficulty in getting the wires tight is that, when they run out of the holes lengthwise in a direction lengthwise of the

HEADS OF GRAIN FROM DIFFERENT FIELDS

grain, they sink into the wood. ''Fiddling'' the wires is done to overcome this sinking into the wood rather than to straighten the wires across the frame. I have tried to devise a way to obviate this difficulty; and the best plan I have found is to take one-ounce tacks, lay a tack on the edge of each hole across where the wire is to run, and imbed each tack in the wood with one tap of the hammer. This saves enough time in fiddling the wires, perhaps, to pay for the time spent in fixing the tacks, and makes it possible to get the wires tighter than is possible in the ordinary way. On the other hand, it slightly increases the risk of broken wires, but does not make that risk serious when one knows how to do the work. The illustration shows an end-bar with three-ounce tacks opposite the top and bottom holes, in the right place for fastening the ends of the wire, and one-ounce tacks imbedded ready to have the wire run over them, assuming the wire to be all one piece; but the one-ounce tacks at the upper and lower holes are hardly needed, since there the wire runs across the grain of the wood.

Stephen T. Byington.

Ballard Vale, Mass.

* * *

Where the Cross Bees Come from

In regard to the cross bees that follow one around the yard, they are bees from a queenless colony, nine times out of ten. If the colony is given a queen the nuisance will stop —at least this is my experience. I had more trouble from this source last season than at any time during the last forty years.

To provide for such emergencies as laying-worker colonies or colonies having drone-laying queens, or colonies actually queenless, I keep several nuclei on hand with young laying queens. These I put on top of such colonies, the only entrance being down thru the brood-chamber below. I have not had a failure in twenty years. I have been a continuous reader of Gleanings since 1875.

Kuna, Idaho. E. A. Cleaver.

* * *

Disinfecting a Hive

When there has been foul brood in a double-walled Buckeye hive would it be sufficient to scrape hive, bottom, and cover thoroly, and then paint with kerosene oil, or would it be necessary to char it? John G. Bodanhafar.

Kendallville, Ind., Oct. 27.

[Scraping your Buckeye hive on the inside would be all right, but painting it with kerosene would not be sufficient. A better way is to put a little straw in the hive, set it afire, and simply blacken the inside surface of the hive. It would hardly be wise to omit this. If you mean by painting the hive with kerosene on the inside, and then touching a match and letting it burn until it is blackened, that would be all right. It is not necessary to burn deep.—Ed.]

* * *

Why I Wire Vertically as well as Horizontally

I have a way of wiring frames that is certain to keep the wires from sagging that is not so expensive as splints. It costs a trifle more than the plain horizontal wiring, however. I wire the frames both horizontally and vertically. Usually I use only one vertical wire in the center, tho sometimes two, dividing the frame in three equal parts.

I pierce holes in the top and bottom bars; then after wiring the frames horizontally I pass a wire down thru the top-bar, being sure it is long enough to reach past the bottom-bar; then I take one turn around the upper horizontal wire, then go to the second, third, and fourth in like manner, then thru the hole in the bottom-bar. I then stretch the vertical wire and fasten with small nails at top and bottom. It makes a neat job if the wrapping is done properly around the horizontal wires. I have used this method for three years, and can find no fault with it so far.

When putting in the foundation I put the sheet in the groove, then cut the wedge in six pieces and use three of them—one in the center and one an inch or so from each end of the frame. The wax does not tear off at the top as it does sometimes in hot weather when the whole wedge is used.

To imbed the wire in the wax I use a hot imbedding-tool, pushing the wire into the foundation. The melted wax makes it stick fine. I heat the imbedding-tool over a lamp.

Wheatland, Wyo., June 11. F. S. Harter.

* * *

The Spacing of Brood-frames

I use the old-style loose-hanging frames. I have tried the fixed or spaced frames twice during my experience, and each time after using them a few years I whittled off the projections and made them loose-hanging frames. I will never be induced to use the self-spaced frame again.

I space the frames as follows: For early spring while the bees are building up I crowd the frames up to 1⅛ to 1⅜, so that the bees can cover more space. Before the bees think of swarming I space them 1½

HEADS OF GRAIN FROM DIFFERENT FIELDS

inches for the rest of the year. The loose-swinging frame is the best for this purpose, and I believe for all other purposes except moving; and for moving I use a screen frame on top with small wire nails driven thru the ends of the frame. This is tacked on the hive, and these nails projecting into the top-bars automatically fasten all the frames.

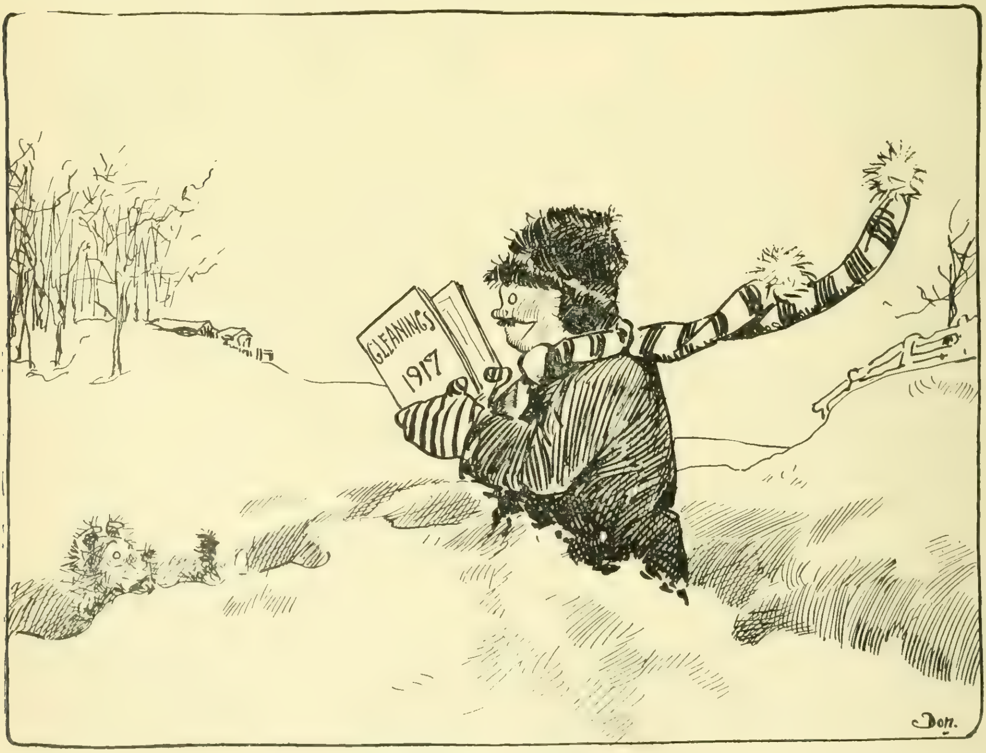
The bottom of the frames can be held by crowding wads of paper between them.

Oswego, N. Y. F. H. Cyrenius.

* * *

Would This Fool the Bees? Why do bees seem to prefer not to build comb down to the bottom-bars of frames? If, say, a hundred frames are examined it will generally be found, I think, that in at least 75 per cent of them the bees have left a space between the comb and bottom-bars, sometimes as much as three-quarters of an inch. This occurs, too, where full sheets of foundation have been used that, when first put in, nearly touched the bottom-bar. Why is it? I have lately heard a theory suggested that the bees do this so that they can more readily and quickly get from comb to comb. It will be noticed that where natural comb has been built—that is, without the aid of foundation — the bottom edges are made round, and are not, therefore, angular as they are when attached to the bottom-bar of a frame. The bees are thus probably aware that this exactly suits their requirements and that they are thus able to pass around from side to side expeditiously. Now if this is proved to be the case would it not be better to humor them in this respect and thereby induce them to attach the comb invariably to the bottom-bar as we wish them to do? If this could be accomplished by having the lower edges of the bottom-bars of frames made rounding, instead of square as at present, it would pay to make the alteration. W. J. Sheppard.

Nelson, British Columbia.



THE BACKLOT BUZZER

BY J. H. DONAHEY

Benny Appleblossom's woman says she's mighty glad the new Gleanings will only come once a month now instead of every two weeks. Benny always knocks off when it arrives and jes' calls it a half a day.

OUR HOMES

A. I. ROOT

Take no thought, saying, What shall we eat? or, What shall we drink? or, Wherewithal shall we be clothed?—MATT. 5:31.

Thou shalt love thy neighbor as thyself.—LUKE 10:27.

Seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you.—MATT. 6:33.

IN our issue for Oct. 1, I gave a sermon that was preached here in Medina in the absence of our pastor. Shortly after that sermon the good pastor sent word to me wanting to know if I would go and talk to his people in East Cleveland on the subject of religion and business. I told him I should be glad to go. Well, when he introduced me to the large congregation of nice people in that Kinsman Ave. Church he explained that he had invited Mr. Root to talk to his people because of a little motto cut in sandstone over the front of the first brick building we erected, in 1878. It seems when he saw that motto, "In God we trust," encircling a straw beehive, he said that the man who had the conviction and courage to start out in business in that way ought to be able to tell them something about mixing business with religion. Well, my good friends, I am not going to tell you anything about that talk more than to say that, after I had finished, so many nice people, both men and women, shook hands with me, and perhaps talked a little, that I did not get home till near midnight; and I think I may add that I did not get tired or wearied, even if it was long after my usual bedtime. In fact, I felt unusually happy during the whole 35-mile ride in my Ford automobile. Now I am ready to look at our text.

The way I came to use the text was this: I asked brother Parker to read the last half of the 5th chapter of Matthew before my talk, beginning with the 19th verse. Well, he read it all thru without note or comment until he got to the 31st verse. After reading that verse he stopped and looked at his audience and then said something like this; but on account of my deafness perhaps I did not catch all of it nor get it just right; but so far as I can remember he said in substance:

"Brethren, does not this passage just now, in view of the 'high cost of living,' sound to many of us a little odd? 'What shall we eat and what shall we drink?' With these things going up and up every day we are here enjoined to 'take no thought.' Something has been said about a new fifty-cent piece; but what benefit to us will be a new coin while fifty cents buys so little of the necessaries of life to what it did a few years ago?"

I was a little disappointed to have him drop the subject there. I did contemplate making some reply to it in my talk that evening; but what I outlined to talk about took so much time that I had to let the matter drop. And another thing, if I am correct, this one verse has been more or less of a stumblingblock all down the ages. My good pastor, Rev. A. T. Reed, once said when I went to him with this verse that this passage doubtless means that we are to take no *anxious* thought, or, if you choose, *over-anxious* thought. Do not worry too much about *what* we shall eat or what we shall drink. If I understand it, the dear Savior meant it as a rebuke to selfishness; and selfishness, when we get right down to it, is the foundation (or so it seems to me) of almost all wickedness and sin in the world. People are greedy. I do not know any better word than *greed* to express it. We need to be constantly on the watch for this outcropping greediness. When I say *we* I include myself. While I strive against this prevailing sin and watch and pray to be delivered from it, the low animal part of my nature keeps crowding in. In order that you may make no mistake in understanding what I mean I will mention something that occurred but yesterday.

I dug some fine new potatoes, and asked Mrs. Root to test them. When they were put on the breakfast-table, after asking God's blessing on our morning meal on the new day, I started to pick out for *myself* the very best potato in the dish. I was going to take the best one, and Mrs. Root would likely take the smallest and poorest as she generally does. Well, let me repeat, I was *going* to take the best potato instead of giving it to Mrs. Root, whom I profess to love more than all else in the world—yes, one whom I profess to love more than *self;* but I am glad to say I did *not* take that best potato after all. I took another one and then passed the dish over to Mrs. Root. Do some of you wonder why I did not pass the potatoes to her before I took any? Well, she was out in the kitchen after something, and so I took my potato and passed the rest to her on her return. Now, it is easy and natural to give your good wife the preference. I presume most of you do it already unless in a fit of absent-mindedness, as with myself, you, without thinking, take the best and leave her the poorest. Well, if we so far forget ourselves as to give way to selfishness when no one but the good wife is present, how is it when you go out in the great wide world? How far do you carry out the second one of our texts, "Thou shalt love thy neighbor as thyself"? Oh, yes! I know we do by fits and starts show that we love humanity. Perhaps some of us suffer and lack at times because we love humanity more than we love ourselves or our families; but, notwithstanding, selfishness and greed to a great extent rule the world. It is not only food and drink, but passion for riches, and constant watching to see that we get the best end of the bargain, looking at the affairs of the day from your own single selfish standpoint.

When I left my chickens down in Florida the last of April, eggs were only 15 cents a dozen. When our good grocer (and I am glad to say he is a Christian man) said he was sorry he could offer me only 15 cents a dozen, and did not want them even at that price, I shall have to admit that at first I felt disappointed to think that that small price would hardly pay for feed. But I said inwardly, "Get thee behind me, Satan;" and then I looked up smilingly into the face of my good friend Burnett and said, "Mr. Burnett, don't you feel troubled or worried. If you and I both lose some money on account of the drop in the price of eggs, we can rejoice in the thought that what is our loss will be a gain to somebody else. The poor hard-working people can now have plenty of eggs in place of being obliged to go without them when they are fifty cents a dozen, as they were last December."

The editor of the *Good Health Clinic* suggested a few days ago that while we were raking and scraping and grasping to pile up treasures here on earth we should keep in mind or consider that when Mrs. Hettie Green (the world's richest woman) died she could not carry with her even a two-cent postage stamp to put on a letter "From Hades to Heaven," or, as it might happen, t'other way about. I think I have read somewhere that a certain miser when he died wanted all his money put into his coffin near him. I cannot remember whether his friends carried out this crazy idea of having the money he worshiped as near to him as possible and as long as possible or not; but it illustrates the point.

By the way, how often we see parents rake and scrape and save; and just as soon as they are safely buried and out of the way the children scatter the hard-earned wealth to the four winds! It really did them harm. The parent, or perhaps parents, in spending their life to save up, have brought a curse on the children they professed to love. In other words, the boys and girls would have been much better off to start with little or nothing, just as their parents started.

Let us consider now the first part of the text—"What shall we eat?" placing the emphasis on the word *what*. I once knew a man who was honest enough to say that all he lived for was something to eat and drink. He said he wanted the best things to eat that the world affords, and probably, also, the best things to drink. I do not think there are many who would own up as he did, but I am afraid there are a great lot of us who in reality are not much better. Over and over again physicians tell us that tempting dishes, and many times expensive dishes, are what keep doctors busy. Instead of being satisfied with plain simple food we must have a lot of the highest-priced stuff to be in fashion—ice-cream, pies, and cake, and expensive fruit—when we do not need them; and, to make matters still worse, something more to eat away on into the night when the digestive apparatus ought to have a chance to clear up and get everything out of the way for the work to be done on the morrow. For the past five or six weeks I have been having just such luscious peaches and a little bit of cheese for my afternoon meals at about five o'clock; and with the nice peaches we have now, I have often said to Mrs. Root, "Sue, I would not swap my fruit supper for the best menu the world can furnish." Sometimes when I for some good reason go to a banquet or party, I eat a little of the repast prepared so as not to attract attention. My digestive apparatus rebels every time. Our habits, especially when Nature is consulted and has her way, are a good deal like the chickens'. When the chickens get accustomed to one particular program they make a big protest if anything interferes. For instance, I let my Eglantines out to have a run in the garden or in the cornfield every day about four o'clock. Now, of course, *they* have no timepiece; but if I do not get around at the exact hour, or I might say the exact minute, the whole tribe of chickens will be up around the gate manifesting in every way in their power their impatience to be let out where they can ramble and have a big time. The fowls thrive better and lay better when they have a regular program each day. So it is with us; and Nature will indicate what that program should be.

In regard to the latter part of the verse, "What shall we drink?" it rejoices my heart to recognize day by day that the whole wide world is just now deciding on water—just water, pure water, and nothing else; and I think the whole wide world is also coming to the conclusion that the safest and best drink at *mealtime* is good pure milk. At such a time milk may take the place of water because it is both food and drink. May the Lord be praised for the craze, if I may use the expression, that is just now coming into fashion of using milk instead of beer, and I hope I may say, to a certain extent, letting milk take the place of both tea and coffee.

Now something about the high cost of living that seemed to worry even our good pastor who preached that splendid sermon given in our Oct. 1st issue that I have referred to. He says he thanks God for seven sons, no one of whom has ever drank or smoked, and who, he feels, are not only saved but *safe*, because they have Christ Jesus in their hearts.

Now I wish to refer to the verse beyond the one I have chosen for my first text. In fact, it is the verse I used in my talk in that church in the great city of Cleveland. If one will read the chapter all thru we shall see the admonition is that, instead of worrying about the high cost of living, what we shall eat and drink, etc., we should "seek first the kingdom of God and his righteousness." I suppose there are some good people who would say that this text might have been all right in olden times, but that it will not "work" just now. I tell you it *will* work *just now*. When any human being starts to put down self and greed, and make it his business to put first the kingdom of God and his righteousness, the other things, food and drink, will surely come. "O thou of little faith! wherefore didst thou doubt?"

To illustrate how God keeps his promise in the last part of the last text, "all of these things shall be added unto you," etc., let me refer briefly to three occurrences in my life that have already been mentioned, perhaps, in these Home papers. When I first started out to follow the Lord Jesus Christ, and to let *him* rule instead of *self*, I started these Home papers in GLEANINGS; and as I wanted my message of "peace on earth and good will to man" to reach as many people as possible, I made the declaration that I would send our journal free of charge to every foreign missionary on the face of the earth if the friends who read GLEANINGS would give me the addresses of those missionaries. Not long after, one of my helpers suggested that he was afraid I would get into trouble, as there are more missionaries in the world than I had any idea of; and the postage was 24 cents a year, even with our little light journal, and in some places it was *48 cents* a year. Could I stand all this postage without getting any subscription money at all? I hesitated a minute and finally replied, "My good friend, don't worry. The great Father above will furnish the stamps as long as I am trying in my own humble way to spread the gospel."

Was the promise fulfilled? Why, bless your heart, it was the best investment I ever made. Now, I hope you will believe me when I declare that it never entered my busy brain that it would help our business financially to send GLEANINGS free to missionaries. By the way, it just occurs to me that a postal card came to me yesterday, Oct. 17, from India, which reads as follows:

> *Mr. Root:*—Thru your kindness GLEANINGS has been coming to us for 30 years, I think. Thank you. It has been a source of much enjoyment, Mr. Mason having many a hearty laugh over your sermons, as well as getting helpful suggestions from them.
>
> We thank God for your strong Christian life, giving out such influence as this stricken world is sorely needing. We wish Christ may come quickly, and you be taken up to meet him in the air.
>
> Gratefully yours,
> MRS. M. C. MASON.
> Tura, Assam, India, Aug. 31.

Well, what do you think happened? When the missionaries scattered far and wide got hold of GLEANINGS, and were touched by my (very likely) awkward attempt to spread the gospel, they took hold of it in a wonderful way, and in a little time we were not only having correspondence, but receiving orders for books and hive fixtures from all over the world. It proved to be "casting bread upon the waters;" but not a thought of self or of profit occurred to me when I did, as you might almost say, blunder into it.

Once more, my new love for humanity, especially for sinful humanity, soon led me to go into our county jail. As we had saloons then, there was a fair crowd there, and I started a Sunday-school in that jail. In a little time I had some of the boys at work in our factory. One of them, as you may recall, learned to set type for GLEANINGS, and afterward slept nights in the jewelry store, and acted as night watchman. Such reckless proceedings, together with my branching out so rapidly in the bee business, alarmed the business men of our town. I mortgaged what little property I had, and then got into a tight place financially. The boys I took out of the jail did not all get into "the straight and narrow path" just at once. I was worried in trying to look after so many things; and before the roof was on that first brick building, the one with the text, "In God we Trust," no one among my friends and neighbors wanted to give me any financial help. Mrs. Root feared I had done wrong, not only in pushing ahead so fast, but in taking the boys out of jail and trying to make *good boys* of them. Said I, "We will kneel down, Sue, and ask the great Father to open the way out of our financial trouble if he is *pleased* with what I have undertaken in regard to the boys in prison." I had in mind the very text we are talking about—"seek ye first the kingdom of God," etc. Do you remember what happened? On the very day the money was due for the brick in the building, a check came from away off in Quebec. Another thing, it read, "Pay to the order of A. I. Root $500 in gold and charge to the account of George O. Goodhue, Quebec."

Once more (please excuse a brief repetition) I was trying to discourage the young boys who were thinking of using tobacco from doing so. One day when there was a little gathering at a beekeeper's home down in Chatham, Medina Co., Ohio, one of the crowd used cigar smoke to quiet the bees. A beginner in bee culture who saw him do it said in substance. "I am going to buy some cigars and learn to smoke so I can handle them as that fellow does."

At once I protested, saying, "My young friend, if you will give up the intention of buying cigars, and promise me not to use tobacco in any shape or form I will make you a present of a new kind of smoker that I have just invented."

Of course that created a laugh all around. But nobody was offended, even if he were a user of tobacco, because of the way I put it. Then another boy said, "May I have a smoker too?" Then the whole crowd took it up and began to laugh because they thought they had got a joke on me. With that beautiful text in my heart, if not before my eyes, I said, "My good friends, you can each and all have a nice new smoker providing you will give me your promise and let me print it in our little bee-journal with your name attached, that, if you ever use tobacco again in any form or manner, you will pay me fifty cents—the price of the smoker."

Once more, dear friends, I had no thought that I had unconsciously started a new scheme for advertising. Shall I be presumptuous if I tell you now that the Holy Spirit was leading me *and I did not know it?* I need not tell our older readers the outcome of the smoker pledge. I met a man away down in Florida not long ago who said he owed A. I. Root a vote of thanks for having induced him to break loose from the shackles of the tobacco habit in years past. Later on I had to modify my offer and put it something in this shape: "Any beekeeper who is a user of tobacco may have a smoker postpaid free of charge if he will give me his promise, to be printed in GLEANINGS, that he will pay me for the smoker, postage included, if he ever uses tobacco again in any shape or manner." In a little time over a thousand smokers were given away, and their names are standing now in black and white on the pages of the early volumes of GLEANINGS. One reason why the pledge *held* was because the friends and neighbors, besides his own family, saw his name in print with the pledge above it. There are but very few people who would like to be told that they have broken their pledge put down in black and white. Not only ministers of the gospel made the pledge, but quite a number of women.

After I had given away several hundred smokers in this way one of our bee friends up in Michigan claimed that my smoker was an infringement on his patent; and rather than incur litigation over the matter I decided he was perhaps right, and I told him that I would give way and not manufacture any more smokers on the principle involved. When I gave him that promise I did it without thinking very much about the smokers I was giving away. He took it for granted that I would buy of him instead of making them; but they would then cost me a dollar each. As before, Mrs. Root said, "Dear husband, have you not been hasty?"

Once more we knelt down and asked "the Lord to provide." Right away came a smoker from away off in California from J. G. Corey, of Ventura. It was made on a new principle, and the idea was so novel and unique that we had a lot of the new cold blasts finished and ready to send out the very day the sample came by mail. Let me go back a little.

My fashion of giving a smoker to beekeepers if they would give up tobacco was a sufficient novelty to get it into the daily papers; and, as in the case before mentioned, it secured for me a lot of advertising; and before the year was out over

20,000 smokers were sold, besides the one thousand or more I had given away. Do you see, my good friends, how this story corroborates the promise of that beautiful text, "and all these things shall be added unto you"?

A few days ago I was taking a little crowd of Christian friends to see the different departments of our establishment. A German boy or man, rather, was at work making smokers, and I stopped by his bench long enough to tell them the story as above; and as I concluded, a bright smile came over his face as he said something like this:

"Mr. Root, I know all about that story you have just been telling. I was the boy who made that first cold-blast smoker, when you brought me the one to look at that came by mail."

My good friend Jacob Kramer had been making those smokers, off and on, for 33 years. Shortly after that talk with me which I have mentioned, he was taken sick, and a few days ago I visited him and was told he was near death. He came to me right from Germany, when he could speak scarcely any English. Shortly after he learned to make smokers he *also* learned to love the Lord Jesus Christ, and to put all his trust in him; and when near death he talked with me freely about the future.* I once said to my good old mother, when I first began to consider that wonderful text, "Love ye your enemies; do good to them that hate you," etc., that this text was an *unexplored region.* That was years ago; and I still think, dear friends, that the matter of returning good for evil is a comparatively unexplored region; and I am impressed, too, by the thought that our three texts in this Home paper are also, in the eyes of the world, an unexplored region. Let me say, therefore, in the language of our text. "Take no thought what ye shall eat or what ye shall drink, but seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you."

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* Mr. Kramer died Oct. 8, 1916.

HEALTH NOTES

SOMETHING MORE ABOUT T. B. TERRY

As I expected, ever since the time of our good friend's death on New Year's morning, 1916, now almost a year, there have been more or less inquiries in regard to Mr. Terry's life, notwithstanding the sketch I gave in our journal for March 15. We can well say of him as I said of Prof. Cook, "Blessed are the dead that die in the Lord from henceforth: Yea, saith the Spirit, that they may rest from their labors, and their works do follow them." No matter where I go, every little while somebody has something to say about Terry. Away up in the northern part of Wisconsin some years ago, in crossing a certain body of water on a steamer a stranger found out where I was from, and commenced to tell how much he owed Terry for his writings on health, and how they had brought him from near death up to strong and robust manhood.

In the *Practical Farmer* for May 15, 1916, there appeared the following sketch, together with an excellent picture as our good friend and benefactor used to look just after he had walked with us around his beautiful home and farm. May God be praised that such a man was permitted to have a fairly long life, and to spend that life as he did, unsparingly, for the benefit of his fellow-men.

MY FATHER

By Robert S. Terry.

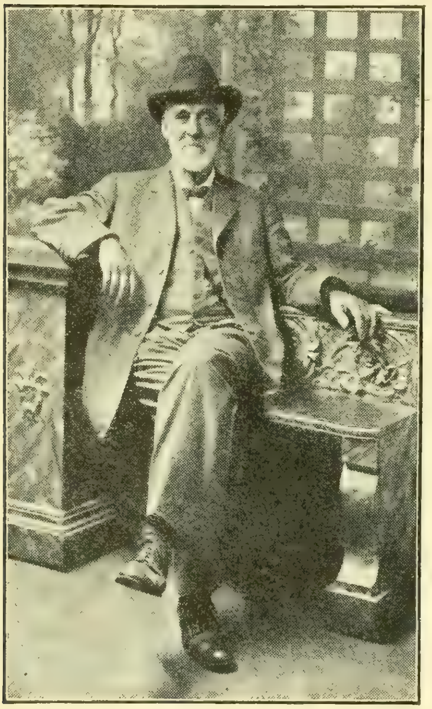
(EDITORIAL NOTE.—Since the sad announcement, in our issue of Jan. 15, of the death of our good friend and Associate Editor, Mr. T. B. Terry, we have received a number of letters from our subscribers, asking that we publish his biography. It has been our intention from the time of Mr. Terry's death to do this; but we were anxious to have it as complete and authentic as possible, and accordingly preferred to wait until we could obtain a biographical sketch from the pen of a member of Mr. Terry's family. It is with gratification, therefore, that we present the following sketch written by his son and helper in his work.—The Editor.)

Theodore Brainard Terry was born in Lafayette, New York, January 2, 1843. He was one of eleven children, the son of Fanny Howell and Reverend Parshall Terry. His father was a Congregational minister.

He was always of a very ingenious and inventive disposition. At the age of fourteen he took first prize at a county fair for a steam-engine which he had made, and which actually ran. He attended high school in Painesville, O., until he was seventeen, when he entered Western Reserve College in Hudson in 1860. He broke down from too much confinement and study, stayed out a year, and tried again to continue his work, but his health would not permit him to do so. While in college he, with two others, stood at the head of a strong class, taking first prize for written translation in Greek.

He was advised by doctors to get out into the open air, so he left school work for good, and went into the butter and cheese business with S. Straight & Co., in which he was able to get plenty of outdoor exercise.

March 1, 1865, he was married to Eleanor M. Tillotson, of Thompson, O. In 1869 he suffered a heavy financial loss, due to the rascality of a Chicago real-estate man, of good reputation until then. Because of this he traded his town property in on a run-down farm at Hudson, O. Here he lived for the remainder of his life.



THE LATE T. B. TERRY
His last picture and an excellent likeness

He was in debt at the beginning about $4000, for equipment and purchase. But at the end of a few years he had cleared the debt, built some, and saved money besides. Farm work was difficult and new to him at first, being a village boy. Not being a woodsman, and not looking overhead, one day his ax caught on a limb, and, glancing, made a fearful diagonal cut across the cords and bones of one foot. The doctor stood over him all one night fighting off lockjaw, giving him, as he said afterward, "enough laudanum to kill six well men." This cut laid him up about six months. At a farmers' institute he made the remark that that cut was the best thing that ever happened to him, for it taught him to farm more with his head and less with his hands and back. He spent this time planning out systematic ways of farming, that is, ways in which he could grow the best kinds of crops. He began specializing in potatoes and strawberries. In 1882 his potato crop of 7000 bushels brought him about $2800, and for two or three years after that the same amount annually. In 1882 he took the first prize of $50, offered by the Ohio State Department of Agriculture for the best detailed report of actual profitable farm management and practice. This report was published in the Annual Agricultural Report for that year.

In 1880 he was one of the first three farmers ever regularly employed by any state to lecture at county farmers' institutes, then first established in Ohio, and proving so successful that they were soon adopted in all other states. The other two lecturers were John Gould, of Aurora, Ohio, and Waldo F. Brown, of Oxford, Ohio. Later on he lectured in many states.

About this time he and his great friend A. I. Root, of Medina, wrote three books, "The A B C of Strawberry Culture," "The A B C of Potato Culture," and "The Winter Care of Horses and Cattle." He wrote "Our Farming" in 1892, this being the story of how he made his run-down farm produce both profit and pleasure, with the help of his wife and children.

About eighteen years ago he developed certain kidney troubles with a tendency to Bright's disease. The doctors told him plainly that he probably had not more than a year or two to live. He then began a careful study and care of himself, as he resolved that he would get well. He began taking the proper foods and exercise, taking cold baths, ventilating his house more healthfully, etc.—in short, doing everything in his power to get well; and he succeeded. He gave up his institute work at this time, but continued to write for *The Practical Farmer*. A short time before his illness he was offered the position of professor of agriculture at Ohio State University, but he preferred to remain on the farm and continue his writing.

After his breakdown he turned to the study of hygiene and health, in the same thoro manner in which he did everything, resolving "to do everything the best he could do or learn how to do." He knew that "where there's a will there's a way," and never recognized the word "fail." He spent the remaining years of his life improving his own health and helping every one else to improve theirs. He wrote "Health Hints" for *The Practical Farmer*, and also the book, "How to Keep Well and Live Long," telling his own experiences and difficulties and how he remedied his weakened condition. He lectured very little after this except on the subject of health.

Until about two months before his death he felt pretty well. Then we began to notice that he did not look so well. We feel that he probably would have lived many years yet, as he had expected, but for the fact that he did a terribly hard and trying job of painting on the flat roof of a large covered cowyard. He was forced to take an unnatural position, holding the brush out in front of him at arm's length. The reaching, twisting, and continuance of this threw a strain on his back and bladder that caused an inflammation. They were susceptible on account of having been weakened many years before, and were unable to resist the terrible inflammation resulting from overstrain. His habits of life would have preserved his health had he not mistakenly severely overtaxed his endurance. He realized for about two weeks before his death that he could not recover, and dictated the disposition of all his affairs.

He passed away New Year's morning, 1916. just the day before he would have been 73 years of age. Left to mourn the loss of a loving and wise counselor are his wife, a daughter, Mrs. Grace T. Ritchie, of Columbus, O., and myself. There are five grandchildren, Robert and Theodore Ritchie, Carroll and Lynne Thompson, and Eleanor L. Terry. Two children preceded him to the great beyond, a son dying in infancy, and a daughter, Mrs. Lilian M. Thompson, who died April 28, 1898.

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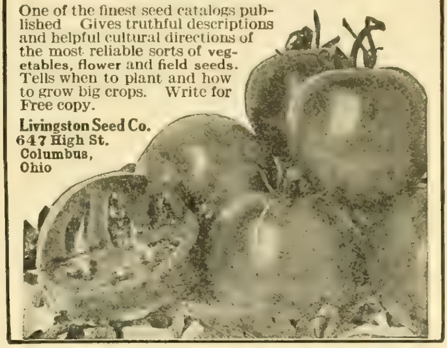

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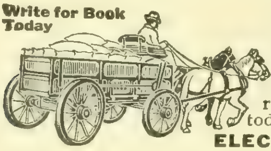

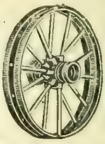

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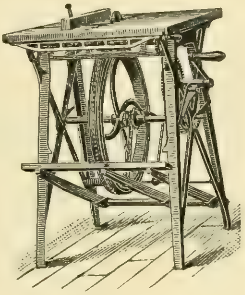

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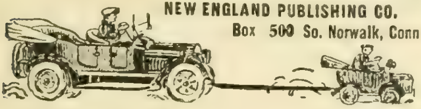

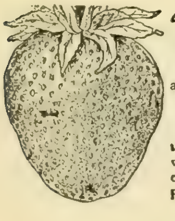

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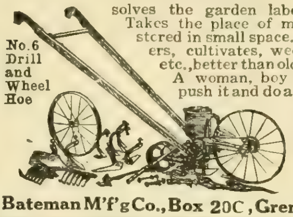

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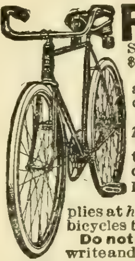

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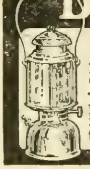

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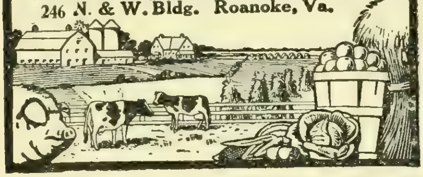

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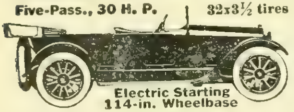

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BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

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The Domestic Beekeeper

Never heard of it before! It's not new, only in name and makeup, for it is nothing more than an overgrown Beekeepers' Review of which it is a successor. *The Domestic Beekeeper* is *greatly enlarged* beginning with the January, 1917, number. The pages will be approximately an inch wider and an inch longer then the old Review, and the reading matter will be wider and an inch longer column. Besides this enlargement, there will be eight extra pages, making 48 pages and cover. Beginning January First, *The Domestic Beekeeper* will be twice the size as the old Review during Mr. Hutchinson's time. The price of *The Domestic Beekeeper* will be the same, i. e., 10c per copy, one dollar a year.

The Domestic Beekeeper wants articles on practical subjects pertaining to honey production from the best writers obtainable, for which we will pay well. With your long experience in the business, you may have " got next " to some valuable " kink," something that is better in your judgment than is generally known. What we want you to do is to write up those valuable features for the pages of *The Domestic Beekeeper* and send it in; and for anything we think well enough of to use will be paid for.

We will also use many more pictures in the *Domestic Beekeeper* than heretofore. If you have good photos, or can get them, showing some valuable feature pertaining to our pursuit, send them on for we can use them and are willing to pay for them.

We have already made arrangements with a few noted writers for the *Domestic Beekeeper* for 1917. Such writers as J. E. Crane, Ira D. Bartlett, Floyd Markham, E. S. Miller as regular correspondents and we are making arrangements with other noted writers for 1917, so no one interested in modern beekeeping can afford to be without *The Domestic Beekeeper* during 1917. Address with your dollar to

The Domestic Beekeeper, Northstar, Michigan

Cultivate Horseradish

Increasing Demand . . . Large Profits
100 Root Sets with Full Information, $1.00
CULTIVATION OF WILD FRUITS
Will interest and surprise you.
FRUIT TREES, SHRUBS, ROSES
Superior Quality. Popular Prices
OLEOMARGERINE, 10 Cents per Pound
The best, easily made in your own home.
BETTER LIVING REDUCED COST
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Clover, Alfalfa, Sweet Clover, Timothy and all kinds of grasses and seed grain of highest quality. Samples and special price list and book of information free. Catalog Free. Dept. 36

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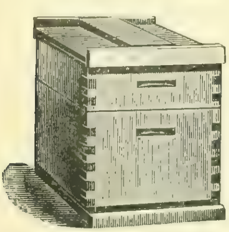

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Pay You to Buy Bee Supplies Now

30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. . . . Write for our illustrated catalog and discounts today.

Leahy Mfg. Co., 95 Sixth St., Higginsville, Missouri

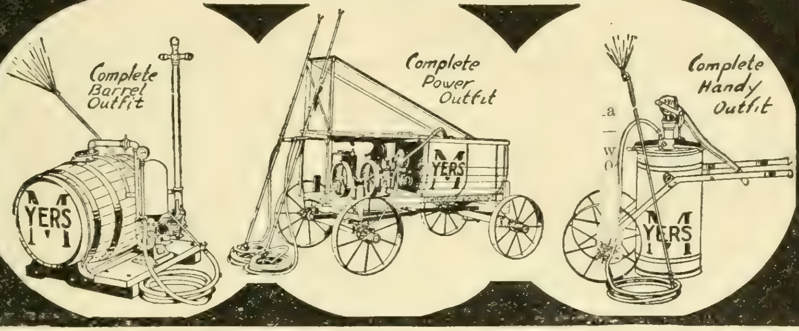
MYERS SPRAY PUMPS

When you go to your grocer, your huckster or your fruit buyer, to sell the crops of your orchards - which kind of fruit do they demand, the sprayed or unsprayed? When they buy now they want the fully matured, perfect fruit—no other will do, and the man who has this kind for sale has no trouble in disposing of it at top prices that make fruit growing profitable.

Here is the point. We want you to see its importance. Windfalls, wormeaten and scabby fruit is no longer marketable at any price. It cannot compete with the sprayed article. Then why not take advantage of this condition, and Spray the MYERS WAY with a Myers Spray Pump?

The MYERS LINE is complete and apace with the requirements of to-day—Bucket, Barrel and power outfits, Nozzles and Accessories for Spraying, Painting or Disinfecting—Used wherever fruit of any kind is a crop and recognized as standard equipment because of practical features and better construction—Write today for large catalog showing all styles.

F. E. MYERS & BRO.
ORANGE ST. ASHLAND, OHIO.



We Wish a HAPPY NEW YEAR

to the fifteen thousand beekeepers in Michigan. We wish you a prosperous new year also. . . .

"Being ready" makes for Prosperity. The quiet winter months are your opportunity. Get your equipment now.

We have Root's goods in Michigan. They are superior in quality and workmanship.

Let us quote you prices on your needs for 1917. Beeswax wanted.

M. H. Hunt & Son, Lansing, Michigan
510 Cedar Street, North

For Sale --- 10,000 lbs. of Bees in Packages --- Spring Delivery

20 YEARS OF SELECT BREEDING GIVES US BEES OF THE HIGHEST QUALITY BEES FOR HONEY PRODUCTION............BEES OF UNUSUAL VITALITY

As we are large honey producers as well as queen breeders, producing from one to two cars of honey annually, we have ample opportunity to test out all breeding stock used in our queen yards. Thus we are able to guarantee our bees to give absolute satisfaction. If you want bees that are gentle, great honey getters as well as **Very Resistant to European Foul Brood**, let us book your order.

Swarms of Bees Without Queens April First Delivery

1-lb. Packages, $1.25 each, 25 to 50....$1.20 each, 50 to 100....$1.15 each
2-lb. Packages, $2.25 each, 25 to 50.... 2.20 each, 50 to 100.... 2.15 each
3-lb. Packages, 3.25 each, 25 to 50.... 3.20 each, 50 to 100.... 3.15 each

Golden and 3-Band Italian Queens April First Delivery

Untested....75 cts. each, $65.00 per 100 Tested....$1.25 each, $110 per 100
Selected. .90 cts. each, 75.00 per 100 Selected... 1.50 each, 125 per 100

Queens' wings clipped free of charge.
Write for descriptive price list....Let us book your order now.
Only a small deposit down required.

LARGEST AND MOST SUCCESSFUL SHIPPERS OF BEES IN PACKAGES

M. C. BERRY & COMPANY, Hayneville, Alabama, U. S. A.

We are Now Booking Orders for Bees and Queens for Spring Delivery. . .

We will have 30 pounds of combless bees a day from April 15th to July 1st, so by booking your order early with us you will know just what day your bees will be shipped as we will not book more than our supply. We will book your order for just 10 per cent of the amount at the following prices. All prices include an untested queen.

½-lb. package $1.50.
One to five 1-lb. packages, $2.00; 6 to 9, $1.70; 10 to 100, $1.60.
One to five 2-lb. packages, $3.00; 6 to 9, $2.70; 10 to 100, $2.60
One to ten 1-fr. nuclei, $2.00 each; 10 or more, $1.85.
One to ten 2-fr. nuclei, $3.00 each; 10 or more, $2.60.
One to ten 3-fr. nuclei, $4.00 each; 10 or more, $3.60.
Full colony, 8 frame, $6.50; 10 frame, $7.50.

Queens from Dr. Miller's best breeders at $1.00; $11.00 per dozen. Tested, $2.00; Select Tested, $3.50; Tested breeders, $5.00 to $10.00. Our address will be Strasburg, Va., until Feb. 15th, then Starkville, Miss. All goods will be shipped from Starkville, Miss. Safe arrival and satisfaction guaranteed.

STOVER APIARIES, Strasburg, Va.

Italian Queens for 1917 --- 3-banded

Will be ready by April 1 to begin mailing untested queens of my exceptionally vigorous strain of Italian bees. They are gentle, prolific, and the best of honey-gatherers. Give them a trial.

Untested, $1.00; 6, $5.00; 12, $9.00.
Tested, $1.25; 6, $6.50; 12, $12.50.

Will book orders now. Send for my free circular and price list, and see the natural conditions under which my queens are raised. Safe arrival and satisfaction guaranteed.

JOHN G. MILLER
723 C St., Corpus Christi, Texas

Fine Yellow Italian Tested Queens only $1 each or I will send 3 for $2. Carload Italian bees at $3.90 a stand, 8 and 10 Hoff. frames, if sold this fall; 200 stands; will take $4.50 next spring. J. L. FAJEN, Stover, Mo.

Eastern Beekeepers

Write us when in need of bee hives, sections, foundation or anything in the supply line. Discount on early orders.

If you are planning on keeping more bees, we can furnish you with full colonies, nucleus, or bees by the pound at reasonable prices, as we have 700 colonies in our several yards.

One-pound flint-glass honey-jars, burnished top, $5.00 a gross. Catalog mailed upon request.

A bargain: 3000 sections 3⅝ x 5 x 1½ slightly soiled at $2.50 per 1000.

I. J. STRINGHAM
105 Park Place, New York City
Apiary: Glen Cove, L. I.

STRAWBERRY (OF ALL KINDS) **PLANTS**

Fine stock of the wonderful Everbearing plants at right prices. Small fruit plants for farm and garden. Write for catalog. Return this ad. and several fruit-growers names for one-half dozen Everbearing plants free.

BRIDGMAN NURSERY CO., BOX 44, BRIDGMAN, MICH.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and should not exceed five lines; and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold.
D. Steengrafe, 81 New St., New York.

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

FOR SALE.—White clover and buckwheat extracted honey. Price on application.
I. J. Stringham, 105 Park Place, New York.

FOR SALE.—Pure honey and beeswax—Porto Rico, Cuban, etc.
D. Steengrafe, 81 New St., New York.

FOR SALE.—Choice table honey, thoroly liquefied, in new 60-lb. cans at 11 cts.
Van Wyngarden Bros., Hebron, Ind.

FOR SALE. — New comb, dead ripe, extracted white-clover honey in new 60-lb. cans, 1200 lbs.
C. A. Neal, Jonesboro, Ind.

FOR SALE.—Extracted honey, white clover, buckwheat, and buckwheat blend; 120 lbs. to case; new tins. J. G. Burtis, Marietta, N. Y.

FOR SALE.—No. 1 white comb, $3.50 per case; No. 2, $3.00; No. 1, fall comb, $3.00; No. 2, $2.50; 24 sections to case. H. G. Quirin, Bellevue, O.

FOR SALE.—A limited quantity of choice stock buckwheat and pure clover honey in 60-lb. cans and 5-lb pails. C. J. Baldridge, Homestead Farm, Kendaia, N. Y.

HONEY AND WAX WANTED

WANTED.—Clover extracted honey.
Deroy Taylor Co., Newark, New York.

WANTED. — Extracted clover and light-amber honey in any quantity. Send sample and lowest price. C. O. Bergstrand, Balsam Lake, Wis.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED.—Extracted clover honey in any quantity; send sample and lowest cash price.
E. B. Rosa, Monroe, Wis.

WANTED.—White clover and light-amber extracted honey. Will buy in lots of 1000 lbs. to a carload. Send sample and lowest price.
M. E. Eggers, Eau Claire, Wis.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

FOR SALE

Get our new Rubber Stamp and Label Catalog.
Acme Printing Co., Medina, Ohio.

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Ct.

SEND TODAY for sample of latest Honey Labels. Liberty Pub. Co., Sta. D, box 4-E, Cleveland. Ohio.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—Circular-saw mandrels, and emery-wheel stands. Charles A. Henry, Eden, N. Y.

Comb foundation cheap, factory to beekeeper direct.
J. J. Angus, Grand Haven, Mich.

Free for the asking—beautiful scriptural wall motto—no advertisement.
W. L. Stewart, Glenfield, Pa.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Greenville, Tex.

FOR SALE.—4 x 5 Seneca camera, like new, for a hive with bees.
F. Konszczynski, 284 Elm St., Wyandotte, Mich.

FOR SALE.—2 sows and 3 boars 2 months old, choice Duroc-Jersey pigs, $10.00 each, f. o. b. here. Papers furnished. Marshal Rankin, Brady, Tex.

Will sell nearly new 20B extractor, $9.00; new, $10 apple-parer, $5.00; will buy four-frame extractor, 10-frame hives, comb-pockets for extractor.
C. O. Proper, Diamond, Pa.

Good second-hand 60-lb. cans, 2 cans to the case, 30 cts. per case, in lots of 10 cases or less. In lots of 25 cases or more, 25 cts. per case. These prices are f. o. b. Cincinnati. C. H. W. Weber & Co., 2146-2148 Central Ave., Cincinnati, O.

THE ROOT CANADIAN HOUSE.—54-56 Wolseley St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

PATENTS

Patents secured or all fees returned. We help sell patents. Patents advertised free. Send data for actual free search. Books free. Credit Given.
E. E. Vrooman & Co., 834 F, Wash., D. C.

POULTRY

S. C. Brown Leghorns; stock, eggs, baby chicks. Circular. H. M. Moyer, Boyertown, Pa.

S. C. R. I. Reds, direct descendants of my winners at Omaha, Sioux City, and Lincoln. Only selected stock for sale. Otto Timm, Rt. 1, Bennington, Neb.

POULTRY PAPER, 44-124 page periodical, up to date, tells all you want to know about care and management of poultry, for pleasure or profit; four months for 10 cents. Poultry Advocate, Dept. 56, Syracuse, N. Y.

GOATS

MILCH GOATS.—"Profit and Pleasure in Goat-Keeping," pronounced by experts the best goat book, regardless of price; profusely illustrated; by mail, 35 cents. Fred C. Lounsbury, Plainfield, N. J.

WANTS AND EXCHANGES

WANTED.—Peterson capping-melter.
Van Wyngarden Bros., Hebron, Indiana.

Wax and old combs wanted for cash or to make up on shares, beekeeper to factory direct.
J. J. Angus, Grand Haven, Mich.

WANTED.—For spring delivery, 600 colonies of pure Italian bees. Write Lewis H. Furgason, Box 108, Windham, N. Y.

FOR SALE OR TRADE, hotel in live Minnesota town; will exchange for land or bees, or both.
Romen Grebin, Preston, Minn.

WANTED.—Man to wear fine suit, act as agent. Big pay, easy work.
Banner Tailoring Co., Dept. 502, Chicago.

WANTED.—To work an apiary in a good location on shares, with preference of buying. Must be free from disease. Harvey F. York, Avant, Okla.

WANTED.—Every beekeeper to plant hardy northern nut-trees, budded and grafted; pecans, English walnuts, and chestnut; immense profits. Catalog free. R. L. McCoy, Lake, Ind.

WANTED.—To sell an interest in the bee business to some honest ambitious young man who wishes to go into the business in a large way in as good a locality as there is in New York State. Do not write unless you mean business.
The M. C. Silsbee Co., Rt. 3, Cohocton, N. Y.

WANTED.—Back numbers of GLEANINGS, one volume each for the years 1875, '77, '78, '79, '80, '81, '82, '83. If you have all or some of these, and want to sell them, write, stating condition and price, postpaid.
J. Allen Fletcher, Rt. 1, New Burlington, Ohio.

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1917. Our catalog and price list will be mailed to you free. Order early and get the discounts.
C. E. Shriver, Boise, Idaho.

WANTED.—Particulars of good unoccupied locations for production of white honey, especially in Michigan, Wisconsin, Montana, Wyoming, Idaho, Colorado, Utah, or other good states; also will furnish outfits to one or more worthy qualified young beekeepers in some of these states who will run bees on shares. Am also in the market for bees in above localities. Box 4, Gleanings in Bee Culture.

REAL ESTATE

FOR SALE.—My home in Redlands, Cal. Will include bees if desired.
P. C. Chadwick, Redlands, Cal.

FOR SALE.—40 acres, 8 of upland, 12 of huckleberries, 20 of good onion and celery land, uncleared. Write for particulars.
M. W. Dunham, Rt. 3, Bellevue, Mich.

FOR SALE.—My home in Florida, nearly 2 acres land, good location for poultry and bees; 36 bearing citrus trees. If you mean business, write for views and particulars. J. B. Herr, Melbourne, Fla.

TWENTY-ACRE FARM.—Good creek bottom; two miles to good market town of 40,000; suitable for bees and truck; large amount of alfalfa raised near; five miles from Purdue University. For particulars address John W. Parker, Rt. L, Lafayette, Ind.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free.
C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

THE SOUTH FOR FARM PRODUCTS.—Southern lands are low in price—give large yields of corn and other grains, grasses, and forage crops; all kinds truck; grow fine fruit. You can get good lands in healthful location, where climate is pleasant and works for you, where two and three crops grow annually, for $15 to $50 an acre, according to improvements. Great opportunity for general farmers, stock-raisers, dairymen, poultry-raisers, fruit and truck growers. Information on request. M. V. Richards, Ind. and Agr. Commissioner, Room 27, Southern Railway, Washington, D. C.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 De Wolf St., Vincennes, Ind.

250 colonies of bees for sale.
G. F. Wilson, 829 Bross St., Longmont, Colo.

Well-bred bees and queens. Hives and supplies.
J. H. M. Cook, 84 Cortlandt St., New York.

Nutmeg Italian queens and Root's beekeepers' supplies, Root's prices.
A. W. Yates, 3 Chapman St., Hartford, Conn.

Fine Italian queens and bees. Send for our 1917 calendar, free.
A. E. Crandall & Son, Berlin, Conn.

253 colonies of bees with supplies in best location in U. S. for honey, bees, or queens. $1200. A bargain. N. Gute, 2363 Fulton St., Toledo, O.

My choice northern-bred Italian queens are hardy, and will please you. Orders booked now for spring delivery. Free circular. F. L. Barber, Lowville, N. Y.

BUSINESS FIRST QUEENS.—Tested queens ready now. Send for price list containing my $10 free offer. M. F. Perry, Bradentown, Fla.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1; 6 for $5. Wm. S. Barnett, Barnetts, Va.

FOR SALE.—80 colonies of fine bees at Tularosa, N. M.; good location; good place to live, because owner deceased. Address N. B. DeWitt, care of E. P. & S. W. Ry., Douglas, Ariz.

My 3-banded Italian queens will be ready to ship April 1. Write for prices of bees and queens by the pound. Safe arrival and satisfaction guaranteed.
J. A. Jones, Greenville, Ala.

FOR SALE.—Entire apiary of 30 colonies in 10-frame Dovetailed hives; supers, sections, hives, tools, etc. Write me.
J. Ward Somers, Brookville, O.

FOR SALE.—1000 lbs. bees in 2-lb. packages at $1.00 per lb. Untested Italian queens, 70 cts. extra, to be shipped April 1 to 20. All orders must be in by April 1.
T. W. Burleson, Waxahachie, Texas.

My bright Italian queens will be ready to ship April 1 at 75 cts. each; virgin queens, 30 cts. each. Send for price list of queens, bees by the pound; safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

FOR SALE.—Italian bees, 1 lb. with queen, $2.25; one-frame with queen, $2.00. Queens, 75 cts. each. Safe delivery guaranteed; 30-page catalog with beginners' outfit for stamp. The Deroy Taylor Co., Newark, N. Y. (formerly Lyons).

FOR SALE.—250 colonies of bees in the Toyah Valley; 8-frame extractor and engine. I want to sell at once. B. B. Fouch, Saragosa, Reeves Co., Tex.

My bright Italian queens will be ready to ship April 1, at 60 cts. each; virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, $1.00; 6, $5.00; tested, $2.00; breeders, $5.00 to $10.00.
J. B. Brockwell, Barnetts, Va.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, $1.00; 6, $5.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Sons, Wilcox St., Binghamton, N. Y.

Queens for requeening. Best on market. One untested, $1.50; 12, $12.00; one tested, $2.00; 12, $18.00; one select tested, $3.00; 12, $24.00. Special low price on 50 or more. Write. Safe delivery and satisfaction guaranteed. The J. E. Marchant Bee and Honey Co., Canton, Ohio.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money returned by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

QUEENS, Doolittle and Moore strain, also Goldens that are Golden. 1 select unt., $1.00; 6, $4.25; 12, $8.00; tested, $1.25. Best breeder, $5.00.

Bees by the pound a specialty. One 1-lb. package, $1.25; one 2-lb., $2.25; large lots less; also nuclei and colonies. Ready March 15. Booking orders now. Circular free.
J. E. Wing, 155 Schiele Ave., San Jose, Cal.

HELP WANTED

Young man, who wants to learn the business of working with bees and poultry. Little experience necessary. E. L. Lane, Trumansburg, N. Y.

WANTED.—A man February 1 to help handle 800 colonies comb honey. Can give good experience and fair wages. G. C. Matthews, Hansen, Idaho.

WANTED.—Experienced beeman familiar with Rocky Mountain conditions to handle bees on shares. Can offer good proposition. Write with details of experience, etc. A. H. Dunn, Fort Collins, Colo.

WANTED.—A queen-breeder to commence work April 1, 1917. Must have had some experience and be able to give good moral references.
M. C. Berry & Co., Hayneville, Ala.

WANTED.—Young man to take charge of small apiary and work at fruit and poultry. Must be good character—no tobacco nor rum. Good chance for advancement for right man.
Fred'k M. Peasley, Cheshire, Ct.

WANTED.—Experienced beemen for 1917 season, beween the ages of 21 and 45; age and experience given in first letter. Any one addicted to the use of intoxicating beverages need not apply.
J. W. George Bee Co., Holtville, Cal.

WANTED.—Experienced beeman who can handle outyard for extracted honey, and knows the bee business thoroly. Must not drink, use tobacco, nor gamble. I work my own hives. I want a man who can do this. White City Apiaries, J. W. Potts, Prop., Gunnison, Miss.

SITUATIONS WANTED

WANTED.—Position in an apiary in the South, Southwest, or West.
Fred E. Osborne, Ahearn, Florida.

SITUATION WANTED.—By experienced beekeeper in Washington, eastern Oregon, or southern Idaho. A. Wendte, 211 N. 9th St., Yakima, Wash.

WANTED.—Experienced beekeeper, single man, age 30, wants position in a large apiary. State wages and full particulars when writing.
M. Miklovich, Box 54, Janesville, Minn.

POSITION WANTED with an old beekeeper. I have had quite a little bee experience; am an American, age 33, of good habits; want an all-summer's job; am a farmer by trade.
Peter Young, Kellogg, Minn.

CONVENTION NOTICES

The meeting of the Ohio Beekeepers' Association will be held in Columbus, Feb. 1 and 2, 1917, during farmers' week at College of Agriculture, Ohio State University, Columbus, Ohio.

Dr. Ernest Kohn, Grover Hill, O., is the secretary, to whom all communications should be addressed.
Delphos, Ohio, Dec. 21. Fred Leininger.

The Montana State Beekeepers' Association will meet this year at Bozeman, Mont., in conjunction with Farmers' Week at the State College, Jan. 21 to 28, 1917.
S. F. Lawrence, Sec. and Treas.
Hardin, Mont., Dec. 15.

The annual meeting of the Ontario Co. B. K. Society will be held on Tuesday, Jan. 9, 1917, in the Canandaigua, N. Y., Courthouse.
Naples, N. Y., Dec. 20. F. Greiner, Sec.

The annual meeting of the New Jersey Beekeepers' Association will be held at the Entomology Building, Bleeker Place, New Brunswick, N. J., on Tuesday and Wednesday, Jan. 9 and 10, 1917.
E. G. Carr, Sec'y-Treas.
New Egypt, N. J., Dec. 24.

A meeting of the beekeepers of North Carolina will be held in Board of Trade Hall, Board of Trade Building, Winston-Salem, on Thursday afternoon and night, January 11, 1917.

This meeting will be in co-operation with the extension work lately started in the state, and every beekeeper in th estate should make his best endeavor to be present, and help boost the good work along. It is expected that a state organization will be effected at that time.

Dr. E. F. Phillips will give an illustrated lecture, and Mr. E. R. Root is expected to fill a large place on the program.

Several live papers will be presented by local beekeepers. The North Carolina live-stock show will be on in Winston-Salem at that time and many beekeepers will have a double reason for attending.

All beekeepers whose names are listed in the department's records at Raleigh will receive a circular of the meeting. If your name is not now on the Department's mailing list, please write at once to one of the following, giving your name and address, number of colonies kept, and kind of hives.
Franklin Sherman, Jr., Entomologist.
George H. Rea, Specialist in Beekeeping.

PROGRAM OF THE NATIONAL BEEKEEPERS' ASSOCIATION, FEBRUARY 6, 7, 8, 1917.

Meeting-place, State Capitol; headquarters, Park Hotel.

TUESDAY, 10 A. M.

Address of welcome, N. E. France; president's address; appointment of committees; recess.

1:30 P. M. TO 5:30.

Topics and speakers are given below; 6:00 supper; 7:30 appropriate entertainment.

WEDNESDAY

9:00 A. M., topics and speakers as below; 1:30 P. M., business session in committee rooms; 1:30 P. M., regular program as below; 7:00 P. M., banquet.

THURSDAY

9:00 A. M., secretary's report; treasurer's report; report of committees; election of officers; appointment of standing committees.

SPEAKERS

Dr. C. C. Miller, Marengo, Ill.; Dr. E. F. Phillips, Washington, D. C.; C. P. Dadant; E. R. Root, Medina, Ohio; Morley Pettit, Guelph, Ontario; Dr. S. A. Jones, Washington, D. C.; G. W. Williams, Redkey, Ind.; Dr. L. C. Leonard, Minneapolis, Minn.; Dr. W. M. Copenshauer, Helena, Mont.; Frank Pellett, Atlantic, Ia.; Prof. Eric Millen, East Lansing, Mich.; E. D. Townsend, North Star, Mich.; Wesley Foster, Boulder, Colo.; E. S. Miller, Valparaiso, Ind.; Hanline B. Miller, Marshalltown, Ia.; Louis H. Scholl, New Braunfels, Texas; J. D. Bixby, Covina, Cal.; E. J. Baxter, Nauvoo, Ill., and others.

TOPICS

State and government aid for beekeeping industry; Educational, research, and extension work; Production and overproduction of honey; Comb and extracted honey; National bee census; State fairs and exhibits; Honey and wax in commerce; Competitors and enemies of honey industry; Standards of grading, packing, shipping, and others; Advertising and increasing consumption of honey; Containers; Freight and express, imports and exports; Honey statistics, quotations, distribution of reports; Supply and demand, the "bear" and "bull" in the honey market; Efficient protective system for American beekeepers; Necessity of a national central office; Plans and policies to make the National a powerful agency for success.

THE UNITED HONEY PRODUCERS; WHAT IT IS, AND WHAT IT IS DOING.

The U. H. P. is an organization of beekeepers to encourage the consumption of honey and to get more money for it when sold.

It has room for two classes of beekeepers—the local producer who has a market for all his own honey, and possibly more, and the remote producer who wants some help in selling his production.

One local producer is needed in every locality to supply the local demand with his own honey as far as it will go, and then with some bought from members who are not so fortunate as to have a local market. It is estimated that 30 times the quantity can be sold by a canvasser that a grocer will sell. Many of our members are not doing any canvassing, but are doing an increasing business by placing a big sign on the road to attract the attention of tourists. Local beekeepers also can control the grocery trade.

The remote producer is needed to furnish the surplus for these local merchants at a better price than the jobber will pay. This will help raise the price of all honey.

These beekeepers are now being organized into state bodies, and these in turn into a national one. Three states are nearly organized now, and others are well along.

The dues will be expended for the purpose of extending the use of honey, except the fixed percentage that is required for postage and office work. It is using it at the present time to furnish bulletins to the schools to teach the food value of honey to the rising generation. There are now 40,000 pupils receiving this instruction, and arrangements are being perfected to increase the number to half a million yet this winter.

Due provisions will be made to safeguard the interests of the members in their own local market. A trade mark has been "invented" that will be a powerful agent in selling the honey of the members. It is a closely guarded secret yet, and will be until it can be protected, and safeguards provided to guard against abuse.

We need one committeeman in each county in the United States, and are opening the door for volunteers. If you wish the position in your locality, send in your application; and if it has not already been provided for it will be considered. This is a good opportunity for young men who intend to make beekeeping their life-work. With a string of these beekeepers in every locality in the United States, and all pulling together, the price of honey will "bounce" up to the place it belongs, and our members will be in position to profit by the advance.

Geo. W. Williams, Secretary, Redkey, Ind.

TRADE NOTES

SPECIAL-SIZE SECTIONS.

In going over our stock we find 18,500 two-beeway sections, B grade, in the irregular size of 4¼ x 4¼ x 1½. To close these out we will accept $3 per 1000 by the single thousand, or $2.75 per 1000 for the lot.

WARNING AGAINST SUBSCRIPTION FRAUDS.

We again warn our readers as to paying unknown solicitors for subscriptions. It is seldom that fraudulent deals are worked among readers of a bee journal. However, very recently in Colorado a man has been soliciting membership in a sort of agricultural club and taking subscriptions also for "Bee Culture," all for $1.00, giving a worthless receipt for the money collected. Never pay out money to an unknown solicitor. Trust only the most reputable subscription agencies or write direct to the publication office.

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HOW ITALIAN BEES CAME TO US
GIRLS AS HONEY SELLERS
SAN JOAQUIN VALLEY POSSIBILITIES
BEGINNERS' LESSONS AND QUESTIONS

VOL. XLV FEBRUARY, 1917 No. 2

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50 to 500—1 lb. bees in packages 1.37½ each 50 to 500—2 lbs. bees in packages 2.37½ each

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CONTENTS

FEBRUARY, 1917

Article	Author	Page
Editorials		89
Rearing Queen Bees	C. W. Aeppler	93
A Maryland Bee-man	Samuel Cushman	100
Out-apiary Expenses	R. F. Holtermann	105
J. L. Byer, the Bee-man	E. R. Root	107
San Joaquin Valley	Florence B. Richardson	109
Girls as Honey Sellers	E. C. Walker	112
What's the Reason	F. Greiner	114
Conversations with Beekeepers	G. M. Doolittle	115
Letters from a Beekeeper's Wife	"Mary"	116
Trouble, Trouble, Toil and Trouble	E. L. Carter	117
When Bees Swarm they Swarm	W. E. Krause	119
New-Style Picture Frame	P. W. Stowell	119
Can This be Done?	The Editors	120
Stray Straws	Dr. C. C. Miller	123
In California	P. C. Chadwick	124
Siftings	J. E. Crane	126
The Dixie Bee	Grace Allen	127
Among the Rockies	Wesley Foster	128
In Texas	F. B. Paddock	129
Our Neighbors' Fields	E. G. Baldwin	130
Beginners' Lessons	H. H. Root	132
Gleaned by Asking	E. R. Root	133
Just News	The Editors	135
Nursery Rymes	M. G. P.	137
Heads of Grains from Different Fields		138
Our Homes	A. I. Root	143
High-Pressure Gardening	A. I. Root	145

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No 1½	holding 24 sections, 4¼x1½, showing 4	10, $1.90; 100, $17.00
No. 6	holding 24 sections, 3⅝x5x1½, showing 4	10, $1.80; 100, $16.00
No. 8	holding 24 sections, 4x5x1⅜, showing 4	10, $1.80; 100, $16.00

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No. 13	Same as No. 3	Nailed, 22c	in flat, 1, 15c	10, $1.40; 100, $12.50	100, $12.00
No. 11½	Same as No. 1½	Nailed, 35c	in flat, 1, 25c	10, $2.20; 100, $20.00	100, $19.00
No. 16	Same as No. 6	Nailed, 30c	in flat, 1, 22c	10, $2.10; 100, $19.00	
No. 18	Same as No. 8	Nailed, 30c	in flat, 1, 22c	10, $2.10; 100, $19.00	

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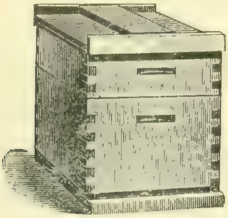

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HONEY MARKETS

FLORIDA.—The demand is good, but no stock on hand. Extra fancy comb honey, per case, brings 10 to 12½; fancy, 10. White extracted honey, per lb., 10; light amber, in cans, 8; in barrels, 7½.
Wewahitchka, Fla., Jan. 19. S. S. Alderman.

BOSTON.—Extracted honey in 60-lb. cans, none on hand. Several lots in transit held up by freight embargos. We quote extra fancy comb honey, per case, $3.50; fancy, $3.25; No. 1, $3.00.
Boston, Mass., Jan. 22. Blake-Lee Co.

CLEVELAND.—No special change in our market; supply only moderate; demand continues light. We quote fancy comb honey, per case, $3.75 to $4.00; No. 1, $3.50 to $3.65; No. 2, $3.00 to $3.20. C. Chandler's Sons.
Cleveland, O., Jan. 25.

PITTSBURG. — Demand is somewhat better, prices holding steady. We quote extra fancy comb honey, per case, $3.75 to $3.90; fancy, $3.50 to $3.60; No. 1, $3.00; No. 1 buckwheat, $3.40 to $3.50. W. E. Osborn Co.
Pittsburg, Pa., Jan. 24.

TORONTO.—The market is steady, and practically unchanged since the last issue. The consumption of honey during the next few months should be very heavy, and higher prices are expected.
Toronto, Can., Jan. 23. Eby-Blain Limited.

HAMILTON.—Demand is much better since the first of the year for both comb and extracted. We quote extra fancy comb honey, per case, $2.50 per doz. No. 1, $2.25; No. 2, $1.60. White extracted honey, per lb., brings 12 cts. in 60-lb. cans; 13 in 5-lb. cans; light amber, in cans, 10.
F. W. Fearman Co., Ltd.
Hamilton, Ont., Jan. 22. MacNab St. Branch.

MONTREAL.—Demand is good. Stocks are reducing fast, and higher prices are likely soon. We quote extra fancy comb honey, per lb., 17; fancy, 16; No. 1, 15; No. 2, 12. White extracted honey brings 12½; light amber, in cans, 10½; in barrels, 10; amber, in cans, 9½; in barrels, 9.
Gunn, Langlois & Co., Ltd.
Montreal, Que., Jan. 23.

SYRACUSE.—The situation of the honey market has not materially changed since last quotation. The demand for comb honey has possibly improved somewhat the last week. We quote fancy comb honey, per case, $3.60; No. 1, $3.00. White extracted honey brings 9 cts.; light amber, in cans, 8 to 9. E. B. Ross.
Syracuse, Jan. 24.

PORTLAND. — Comb honey is not very active. Prices are very unsatisfactory on account of prohibitive freight rates on local shipments. Extracted is in fair demand only. We quote extra fancy comb honey, per case, $3.50; fancy, $3.25; No. 1, $3.00; No. 2, $2.75. White extracted honey brings 9 cts.; light amber, in cans, 8; amber, in cans, 7½. Clean, average yellow beeswax brings 25 to 26.

PHILADELPHIA.—Comb honey is moving fairly well, particularly medium-priced goods. We have inquiries for extracted, particularly light or dark amber. Write us what you have to offer. Our jobbing prices to retail dealers are for extra fancy comb honey, per case, 18; fancy, 17; No. 1, 13 to 14; No. 2, 11 to 12. Clean, average yellow beeswax brings 30 to 32. Chas. Munder.
Philadelphia, Pa., Jan. 22.

LOS ANGELES.—These prices are what the retailer pays our wholesale customers, not what we are buying at. There is no supply of extracted except for local use, but a surplus of comb with little demand. Local prices on extracted slightly advanced, with stronger demand for honey. We quote extra fancy comb honey, per case, $4.25; fancy, $3.85; No. 1, $3.25; No. 2, $2.50. Water-white, stock is exhausted. White extracted honey, per lb., brings 9½; light amber, in cans, 8; amber, in cans, 7. Clean, average yellow beeswax brings 35.
Los Angeles, Cal., Jan. 20. Geo. L. Emerson.

KANSAS CITY.—The market on extracted honey is very firm, the same selling at from 7 to 9 cents a pound, according to quality and kind. Some southern honey sold as low as 6½ cents, but it was dark. We quote No. 1 comb honey, per case, $2.75; No. 2, $2.50. Clean, average yellow beeswax brings 28. C. C. Clemons Produce Co.
Kansas City, Mo., Jan. 22.

DENVER.—The demand for comb honey in carload lots is improving. We are quoting the following jobbing prices: Fancy white, $2.84; No. 1 white, $2.70; No. 2 white, $2.57, per case of 24 sections. Extracted white, per pound, brings 9 to 9½; light amber, 8½ to 9. We are always in the market for beeswax. For clean yellow wax we are paying 30 cts. per pound in cash and 32 in trade, delivered in Denver. Colorado Honey-producers' Ass'n.
Denver, Colo., Jan. 18. F. Rauchfuss, Mgr.

ST. LOUIS.—Comb honey is still moving very slowly in this market, and supplies are quite ample for the demand. Extracted honey is in good demand, and stocks are almost cleaned up. Southern extracted honey in barrels and cans would meet with ready sale. We quote extra fancy comb honey, per case, $3.50; fancy, $3.25; No. 1, $3.00; No. 2, $2.75. Light amber extracted honey, in cans, brings 10 cts.; amber, 7½ to 8; in barrels, 7 to 7½. Clean, average yellow beeswax, per lb., brings 33½.
R. Hartmann Produce Co.
St. Louis, Mo., Jan. 22.

CHICAGO.—Comb honey is beginning to move a little more freely than for the past thirty days, and it may be that we will clean up yet to a greater extent than was the expectation sixty days ago. Prices are, if anything, weaker. Best grades of white are bringing 14 cts. per lb. with an occasional small lot at 15. Amber grades are from 1 to 2 cts. per lb. less. Extracted remains steady at from 9 to 10 for the best grades of white, with ambers at 7 to 8. Light ambers, good flavor, sell at 9 cts. Beeswax is ranging at from 30 to 32 per lb.
Chicago, Ill., Jan. 18. R. A. Burnett & Co.

TEXAS.—I note with the inquiries for honey there are more calls for extracted than ever before. I hope this will continue. The consumer has begun to realize that he is getting the pure article in this form, and it does not cost him nearly so much. These are some good results from the pure-food law. We quote No. 1 bulk comb in sixty-pound cans 10½ to 11; No. 2, 9½ to 10; ½ ct. advance for small sizes. Light-amber extracted honey, in cans, brings 8½ to 9; in barrels, 7½ to 8; amber, in cans, 7½ to 8; in barrels, 6½ to 7. Clean average yellow beeswax brings 27 to 28.
Sabinal, Tex., Jan. 17. J. A. Simmons.

SAN FRANCISCO.—Very little movement in comb honey; but stocks are not heavy, and everything will clean up by spring. Extracted seems to be wanted from all sides, and the demand exceeds the supply on good grades. Very few lots of extracted honey are in first hands, and it is difficult to give exact buying figures, as asking prices may be higher or even lower than quotations. Some black honey-dew has been offered, but not sold. We quote extra fancy comb honey, per case, $3.00; fancy, $2.75 to $2.85; No. 1, $2.40 to $2.50. White extracted honey, per lb., 8 to 9; scarce; light amber, in cans, brings 7½ to 8; amber, in cans, 6 to 7. Clean average yellow beeswax, per lb., brings 30 to 35.
Leutzinger & Lane.
San Francisco, Cal., Jan. 20.

NEW YORK.—Nothing new to report so far as comb honey is concerned. Some demand for No. 1 and fancy white stock, but these grades are fairly well cleaned up. Considerable stock on the market of off grades for which there is little demand, and while choice white stock will still bring around 14 to 15c per pound, off grades are hard to dispose of at 10 or 11c per pound. Extracted honey is in good demand with the exception of buckwheat, for which the season is practically over. Domestic crop pretty well cleaned up and new crop of West India, which is now arriving in large quantities, is in good demand and prices are advancing. We refrain from making quotations as they would probably not hold good for any length of time. Beeswax is steady and in good demand from 32 to 34c per pound, according to quality.
New York, Jan. 24. Hildreth & Segelken.

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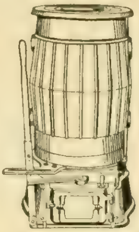

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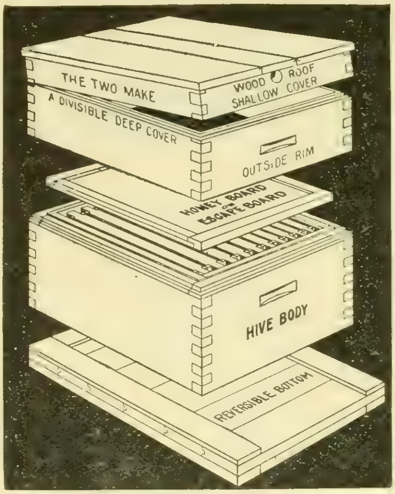

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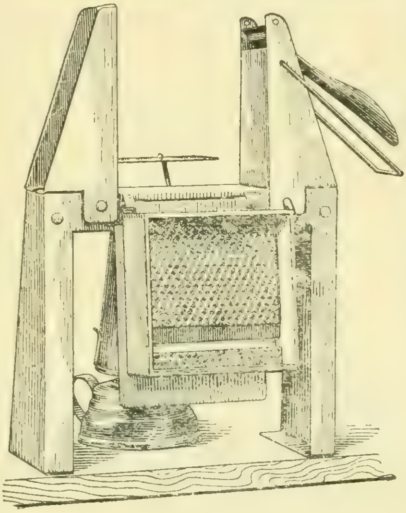
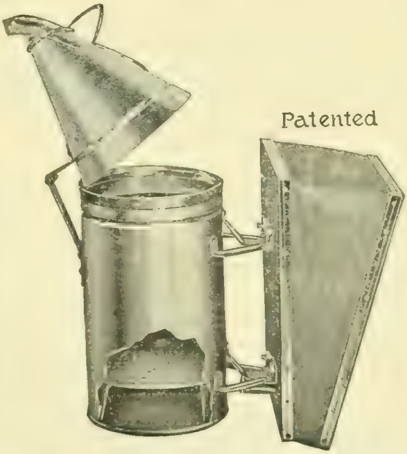
Price $13.75 for 5 hives, f. o. b. Grand Rapids, Mich. Delivered prices furnished on request. Double wall with air spaces, insulation, or packing as you may prefer. Over an inch of space between the outer and inner walls. Total wall space two and a quarter inches. If you have ever had occasion to spend any time in a building single-boarded, during cold weather, you can appreciate the advantages of double walls. Even with a redhot stove you are freezing on one side and roasting on the other. Double walls relieve this condition and reduce the quantity of fuel necessary. Honey is the fuel, the bee the stove. The life of the bee as well as the stove depends on its work; do not burn them out. Send for catalog and special circulars. We are the beehive people. Send us a list of your requirements for 1917 and let us figure with you. Small as well as large orders are wanted. Let us add you to our list of many pleased customers in all parts of the country.



Section-fixer

A combined section-press and foundation-fastener of pressed-steel construction. It folds the section and puts in top and bottom starters all at one handling, thus saving a great amount of labor. With top and bottom starters the comb is firmly attached to all four sides — a requirement to grade fancy. Increase the value of your crop by this method. H. W. Schultz, of Middleton, Mich., in writing us says: ''Your section-fixer is the best yet; can put up 150 sections per hour with top and bottom starters.'' Price with lamp, $2.75. Shipping weight 5 lbs. Postage extra. Send for special circular fully describing this machine.



Bingham Bee-smoker

has been on the market nearly forty years, and is the standard in this and many foreign countries. It is the all-important tool of the most extensive honey-producers of the world. For sale direct or by all dealers in beekeepers' supplies.

Smoke Engine, 4-inch stove.......	$1.25
Doctor, 3½-inch stove............	.85
Two above sizes in copper, 50 cts. extra	
Conquerer, 3-inch stove...........	.75
Little Wonder, 2½-inch stove.....	.50
Hinged cover on two larger sizes.	
Postage extra.	

A. G. Woodman Co.
Grand Rapids, Mich.

Order Your 1917 Supplies from Syracuse

We Carry the Largest Line in New York State

And are fully prepared to fill your order at once, as we have just received five more carloads of fresh supplies from the factory. Many last year got left on their five-gallon cans, as we were sold out early. This year we have almost twice as many in stock; but to be sure of them you better place your order now. They keep.

Hives and supplies purchased now can be put together in a good workmanlike way, and painted during the idle winter days, and they will be ready when the bees swarm in the spring.

We have 10 old-style Chaff Hives, eight-frame, and one gross of one-pint premium jars that we should like to dispose of. Send for price.

Send for our 1917 catalog with new prices.

F. A. Salisbury, Syracuse, New York
1631 West Genesee St.

Look for the

BEEWARE BRAND

on all your

Hives, Supers, and Sections

BEWARE
WHERE YOU BUY YOUR
BEEWARE
WATERTOWN, LEWIS U.S.A.
MAKES THE FINEST

Our New 1917 Catalog
is Now Out

Be Sure You Get Your Copy

G. B. Lewis Company
Watertown, Wis.

GLEANINGS IN BEE CULTURE

FEBRUARY, 1917

EDITORIAL

KIND WORDS FOR THE NEW MONTHLY

KIND WORDS are pouring in by every mail in praise of the new GLEANINGS—not only for its typographical appearance but for its contents. Some say that when they saw the announcement that there was to be a change from the semi-monthly they had misgivings; but they all say that after seeing the journal in its new form they are more than pleased. As it would be impossible to acknowledge all of these kind words by letter, it is only fitting that we express our sincere appreciation to one and all for the kind things said and best wishes for the future. The good opinions expressed about the monthly will serve to stimulate us to do better. Thanks again.

* * *

THE NATIONAL CONVENTION

THE NATIONAL Beekeepers' Association will hold its annual convention at Madison, Wis., on Tuesday, Wednesday, and Thursday, Feb. 6, 7, 8. The headquarters will be at Merchant's Hotel. The program came so late that we are unable to give it in full; yet it is sufficient to say that the program is strong, and a good one. The following will be the speakers: N. E. France, Platteville, Wis.; President Francis Jager; L. D. Leonard, Minneapolis; Dr. E. F. Phillips, Washington, D. C.; Dr. E. Dana Durand, Washington; Dr. S. A. Jones, Washington; Prof. H. C. Taylor, Wisconsin; Dr. Wm. Copenhauer, Helena, Montana; Prof. F. Eric Millen, Iowa; R. A. Burnett, Chicago; E. R. Root, Medina; Wesley Foster, Boulder, Colorado; Frank Rauchfuss, Denver, Colorado; E. D. Townsend, Northstar, Mich.; Geo. Williams, Redkey, Ind.; C. P. Dadant, Hamilton, Ill.; Hamlin B. Miller, Marshalltown, Iowa.

CO-OPERATION

IF THERE IS any place on the continent where co-operation could be made a success it would be Ontario, Canada. There is not a state nor province in America where beekeeping is on a better commercial basis than in Ontario. The territory is not large, and the beekeepers, many of them in the business in a large way, have covered practically all the good bee ranges in the province.

Already they are co-operating in the matter of prices, and we heard no little grumbling on the part of a few because the committee have recommended too low a scale of prices. Some felt sore because they sold too early, and now they wish they had their honey back. On the other hand, the committee had prevented many sales being made too low; and so, taking it all in all, they help materially to stabilize prices.

* * *

WINTERING BEES IN TWO-STORY HIVES

THERE SEEMS TO BE a tendency on the part of some of the best beekeepers in the country to winter bees in two-story Langstroth hives. The general scheme is this: The upper story is filled with honey, and the bees allowed to form a winter nest in this upper story. The lower story may or may not contain honey; but all combs partly filled should be put in the lower story. Bees put up in this form often winter well without any packing when the same cluster of bees in a single story would die. Heat naturally rises, and a cluster of bees will be in the warmest part of the hive, clear away from the chilling drafts of the cold bottom-board and the entrance.

It is apparent from certain outcroppings at the recent bee conventions that some beekeepers have been wintering in two-story hives without protection for some years with remarkable success, and yet the fact has not been generally known. Dr. E. F. Phillips, of the Bureau of Entomology, believes that the ideal condition in wintering outdoors is in two-story hives, two hives to a winter case.

Mr. Mel Pritchard, who has charge of two of GLEANINGS' apiaries, has been wintering bees in both single-story and double-story hives. He finds that bees in the latter come out in a little better condition than those in the former. There are two reasons that he assigns for this. (1) The double hives have a larger amount of stores, relatively, and (2) the cluster is clear up to the top of the hive away from the chilling drafts at the entrance. A colony that is "rich in stores" and in the warmest part of the hive well protected will winter if any colony will.

* * *

LONG GRASS IN FRONT OF HIVES

MR. FRANK COVERDALE, of Delmar, Iowa, says he prefers to have grass four or five inches long near the entrances of his hives. When a swarm comes out with a clipped queen the latter will have difficulty in getting far away from the hive; and instead of running along on the ground and getting lost she will crawl up a spear of grass where she can be easily seen. The usual plan recommended is to cut down the grass short all around the hive, so the queen can be easily found, for a like reason. There is something in Mr. Coverdale's idea. Of course he does not recommend having the grass tall, for that would impede the flight of the bees to and from the hive.

* * *

SELLING DARK HONEY

BEEKEEPERS generally have the idea that, when they have amber or dark extracted honey, the only thing they can do is to sell it in a jobbing or wholesale way to some large dealer. While this, undoubtedly, is the best policy for most producers, yet experience has shown that one who can sell a light-colored extracted table honey around home can also sell an amber; and, strangely enough, there is a certain trade that prefers it to the light-colored honey.

Some foreigners, accustomed to the dark and amber honeys of their old homes in Europe, very much prefer the dark honeys of the country of their adoption. The light-colored honeys they sometimes characterize as "sugar and water," without any taste or flavor.

It should be remembered that Europeans make a large use of honey in their cooking, and that is one of the reasons why those in this country use the dark and amber honeys.

It is time to wake up to the fact that dark honeys in localities where there is a large foreign population can be sold from the doorstep and in the local groceries, in some cases, sometimes as readily as the light-colored, generally called "table" honeys. There are numerous instances on record where this is occurring, year in and year out. If Mr. Barclay, of New Jersey (see News Items) can sell his "blackstrap" or "bug-juice honey" at $2.50 a gallon, the beekeepers who have a better quality of amber ought to find a local demand for their product.

We know of instances where some beekeepers are doing a very profitable business in selling their fall or medium grades of honey right at their own doorsteps, and are getting 20 to 25 cts. per lb. What some *are* doing, others *can* do.

* * *

QUADRUPLE WINTER CASES

AS ALREADY stated, we are wintering bees in three or four different ways—in the cellar, by the usual orthodox plan, outdoors in double-walled hives, and in large winter cases four hives to the case. In place of a honey-board or super cover we are using sheets of glass in some of the big cases in order that we may more easily determine the size, location, and condition of the cluster.

Zero weather struck us on Dec. 15; and in the height of it, and in the midst of high wind, we have been noting the location and size of the clusters under glass. This was done by gently lifting up the tray containing planer-shavings, and pulling the shavings under the tray until the glass is exposed. A careful examination of a number of colonies showed the clusters were hugging the *inside* sides of the hives. In a number of instances the clusters were directly opposite each other in adjacent hives, and a distance from each other of only two ⅞-inch boards, of which the inner hives are made. It is apparent that the combined heat drew the clusters together. It is apparent, also, that the cold wind and low temperature make the outside of the hive, notwithstanding it is surrounded by six inches of packing and ten inches on top, colder. It is apparent, also, that the two inside walls of the hives will be warmer than the two outside walls. Practice, in the case just mentioned, bears out the theory that the four hives placed in a group will have two inside walls that will be warmer than the two outside walls. Notwithstanding the zero weather and a pretty stiff wind, the clusters under the glass were not drawn up tight, but seemed to be perfectly comfortable and quiet. In one or two cases, where the clusters were evidently small in the fall, the ball of bees seems to be drawn together more tightly.

The moral of this is that bees in quadruple cases will have only two exposed sides while in regular double-walled hives they will have four exposed sides to the weather.

* * *

WINTERING BEES IN BARRELS

ONE OF THE LARGEST producers in New Jersey told how he wintered his bees in asphalt-barrels, which he secures at a very low price. He lays the barrel on its side on a regular hive-stand, pushes his eight-frame hive back into the barrel, and then stuffs packing material all around the hive and in front, leaving a passageway for the entrance.

Not a bad idea. The same principle could be applied to cracker-barrels or other barrels that one can secure cheaply. They would need a covering of roofing-paper to keep out the rain.

Incidentally it may be remarked that a ten-frame hive won't go into an ordinary barrel unless the end of the barrel is cut off a few inches. Rather than do this an effort should be made to secure larger barrels.

* * *

INSPECTING THE MAN

MR. E. G. CARR, State Foul-brood Inspector of New Jersey, reported that a good many failed to make a success of the Alexander or Miller treatment for European foul brood because of the misconception as to what constitutes a "strong colony." Mr. Alexander, Mr. Carr pointed out, laid particular stress on having the colony strong. If not strong, it was to be doubled up with some other colony until it was strong. "Dr. Miller," said Mr. Carr, "evidently has very strong colonies or else he could not produce such crops of honey as he does. A good many beekeepers think that a four or five frame colony is strong. It should have," he said, "at least five frames of brood and six frames of bees; and it will be a great deal better if the hive is boiling over with bees."

When we asked Mr. Carr the question whether he recommended the Miller ten-day queenless condition or the Alexander 27-day condition, he said, "That depends on the man. Before I recommend either treatment *I inspect the man.* If he belongs to the Dr. Miller class I tell him that ten days of queenlessness is enough. If he is out of that class I advise him to keep the hive queenless twenty-seven days and follow exactly the plan recommended by Mr. Alexander. If he is of the careless, ignorant class, and the disease far advanced, I advise him to burn the whole hive. It is very important to *inspect the man* before prescribing treatment."

* * *

COMB VERSUS EXTRACTED HONEY

THIS HAS ALWAYS been a perplexing question; but for the years 1917 and 1918 it is still more perplexing — it is momentous if not serious. Whether one should drop the production of comb honey, in view of the present market conditions, and produce extracted, is a matter that should not be settled too hastily. There are many factors, national as well as local, that should be carefully considered before a final decision is reached. We feel that it would be hardly wise or safe for us to make any recommendations as yet; but a careful survey of conditions may enable the intelligent reader, at least, to reach his own conclusions.

The editor has just returned from an extended trip thru the middle West and thru the East. We not only kept our eyes and ears open to see and hear everything we could get hold of, but we interviewed producers, large and small, and the large buyers in various markets, and here are some of the conditions that we have met:

1. First and foremost, we may say there is a general demand for all kinds of extracted honey. At first the market was chaotic. It gradually began to recover itself, so that now extracted honey is scarce and prices firm. We positively know that agents are scouring the West

Indies for some large buyers in the city of New York. When these buyers are interviewed and asked what they are going to do with this honey they will give out no information. They simply say that they want the honey and are prepared to pay cash for it.

2. The market is overloaded with comb honey, and prices are easy. A great deal of Western comb honey is found at some particular points in the East. Some of it has begun to granulate, or, as the saying is, "gone back to sugar." Some large wholesale grocery concerns loaded down with some of this product are trying to unload. Some dealers say they will never handle comb honey again. It granulated on their hands last year, and they will not be caught again.

On the other hand, there seems to be no complaint of Eastern comb honey, nor of Western honey that *does not granulate.* Much of this is moving off at fair prices. We have learned of some particular localities in the East where carloads of comb honey are in storage. If this could be held in liquid condition until next season there would need be no particular concern; but it is granulated.

It is but fair to state that not all Western comb honey shows this early tendency to granulate. Much of it will remain liquid as long as the Eastern comb honey. It is but fair to say, also, that Western comb honey, as a rule, will grade higher than Eastern comb honey. The sections are more evenly filled, are whiter, and the product is of good flavor. But because *some* Western comb honey granulates soon after cold weather sets in, that very fact adversely affects the sale of *all* comb honey. Some Eastern comb-honey producers are sore over the fact.

3. Large numbers of extracted-honey producers are making plans to produce a large crop next season. Or, if they produce any comb honey, they will run exclusively for extracted. These people are glad that they are not comb-honey producers. The present good prices on extracted, with the probabilities that they will hold for next season, look very encouraging.

4. A large number of comb-honey producers are going to change over to extracted. The present prices of the liquid product as compared with the comb have led them to feel that they can make more money producing the former than the latter.

5. A large number, and perhaps a very great majority, of comb-honey producers east of the Mississippi will continue to produce what they have been producing. They have always had good prices, and the demand has been quite satisfactory. Then, moreover, they feel that the time will come when there will be a scarcity of comb honey and an overproduction of extracted.

6. The two past favorable seasons in the East, at least, with good prices, will induce a large number of backlotters and farmers to keep a few bees. They have seen what their neighbors have done in honey production; and, having discovered that bees pay a larger return on a given investment, will keep a few bees, and, of course, will produce extracted, because that requires less experience.

7. Two years ago there was an overproduction of extracted and an underproduction of good comb honey. Prices on the liquid article were sagging while those on comb honey were going up. Two years ago there was an overproduction of potatoes, with the result that some farmers became disgusted. They stopped raising potatoes entirely, and now they wish they had kept on with them.

The comb-honey producer, remembering some of these peculiar conditions of supply and demand, will reason that a large number of beekeepers will change over to extracted. If they will do as the potato-farmers did, there is a possibility that comb honey may have a very strong demand in 1917 and '18.

8. We are reliably informed that in some of the alfalfa districts and in the arid West there are a good many carloads of comb honey in storage seeking a market. There is a great deal more in the Eastern markets, and this is granulated on the hands of the dealer. In some of the alfalfa districts beekeepers are wishing they had produced extracted instead of comb; and some of them are already saying that they will produce extracted honey next season.

9. As Wesley Foster says in his department in this issue the cost of changing over from comb to extracted honey producing is no small item; but perhaps the time has now arrived when the production of alfalfa comb honey has exceeded its demand.

10. There is one thing the beekeeper should remember, and that is, that the business of bottling honey has been growing by leaps and bounds. The public is just waking up to the fact that honey is a really cheap food and a necessary one—a food that ought to be in every home like ordinary granulated sugar. It is now found in our large groceries as it never was before. Grocers will handle bottled honey when they will not touch comb honey. For this reason the demand for extracted will continue strong.

REARING QUEEN BEES

Experiments in Starting Cells at the College of Agriculture, of the University of Wisconsin

By C. W. Aeppler[*]

EVERY beekeeper finds pleasure in agreeing with Elisha Gallup and G. M. Doolittle that "around the queen centers all there is in apiculture." The breeding of bees for increased honey production has met with great success by many who have tried this interesting pursuit. The possibilities in rearing better queens is not always heeded by the beekeeper. The beekeeper who pays little attention to the requeening of his colonies systematically, is, as a rule, also not the beekeeper who realizes the greatest crops of honey and the greatest profits.

Breeding work has paid dividends thruout the plant and animal world. More attention has been paid to the breeding of livestock than to the breeding of bees. This is perhaps true because we have had more breeders of livestock that were specialists. However, with an increase of beekeepers, and fewer "keepers of bees," better bees, free from disease, will be the rule.

In the preparation of this paper it is not the intention of the writer to discuss the reasons for rearing queens—conditions under which they are reared naturally by the bees in swarming, supersedure, and queenlessness. Such a treatise would involve a large publication. For reference to such works, the reader is referred to Bulletin No. 55, Bureau of Entomology, United States Department of Agriculture, by Dr. E. F. Phillips, Ph. D., and Scientific Queen-rearing, by G. M. Doolittle. The intention of this paper is to present to the beekeeper and queen-breeder a slightly new method of rearing queens—a method very simple, yet more satisfactory than many when queens are to be reared on a large scale for a long period of time.

Two years ago the rearing of queen-bees was begun by the writer at the Wisconsin Agricultural Experiment Station. The queens reared were sent to beekeepers thruout the state in lots of five or less. It was necessary to place a limit on the number sent to each in order to make the work beneficial to all. Effort was made in particular to supply beekeepers with queens in European-foul-brood districts. It is expected that these queens will serve as a basis for better bees thruout the state. By rearing queens for his own colonies, a beekeeper can improve his bees within a short time. A number of letters received from various beekeepers in the state go to show that this is being done as rapidly as possible.

Various conditions have to be met in rearing queen-bees in different parts of the country. In the northern states, such as Wisconsin, entirely different success could be expected if the same methods were used as used in Texas, and if conditions were the same. In the early spring, and sometimes up to June 15, cool nights are the rule. This is also usually true after the middle of August. Such conditions are detrimental in starting queen-cells by the Doolittle method. *In the early spring the Alley and Dr. Miller methods give better results under Wisconsin conditions.* When the nights are cool, cells started by the Doolittle method are largely rejected when started under ideal conditions during the day, if started by the systems usually advocated. It is the object of the writer to show clearly how success can be had under any conditions in this latitude.

In the two years of commercial queen-breeding at the Wisconsin Agricultural Experiment Station, and even before that time in a smaller way, it was the writer's privilege to carry on experiments to determine the most satisfactory ways in starting queen-cells under Wisconsin conditions. With certain modifications the method worked out would be made applicable to most parts of the country.

CONDITIONS NECESSARY FOR SUCCESS IN STARTING QUEEN-CELLS.

The greatest requirement in queen-rearing is the cell-building colony; secondly, the management of the cell-building colony; and the size, shape, and condition of the artificial cell cups.

EXPERIMENT WITH CELL-BUILDERS.

Not all colonies are cell-builders. More or less success may be had with any colony in accepting queen-cells, if strong in bees; but a good cell-building colony is not readily found. By a good cell-builder is meant one that will accept from ninety to one hundred per cent of the cells given it and *do so every time.*

Last spring about fifty colonies were tried out to determine which should be used during the season as cell-builders.

The usual method of placing the cell-bars in a super above a queen-excluder was followed in these experiments. During cool nights such as exist in Wisconsin in early spring, and no honey-flow, it has been found that cells are often torn down by the bees, even after they are sealed over. Just how to overcome such difficulties was still a problem at this time.

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[*] Photographs by L. G. Gentner and C. W. Aeppler.

Prepared bars of cells were given to each and every colony; and the six that accepted the most cells during these trials were recorded. A greater number of trials were subsequently made with these six colonies. The colonies were all about equal in strength, and were fed each evening during this period. At least a dozen trials were made, and finally the best two were selected as "cell-builders," and the others set aside to be used in "finishing" cells. Of these two colonies, one was about ten per cent better than the other. Let us look back a little. From the records it was found that both had young queens reared during the previous August. Both queens had been reared from the same mother, which was considered the best breeder in the yard the year previous. From these experiments involving the starting of several thousand cells,* it is concluded that a *young vigorous queen* is necessary to produce the greatest number of nurse-bees needed in a cell-building colony. It is usually conceded that bees are less apt to swarm if a young queen is present, yet an old queen could never be used in the cell-building colony to be described presently.

The number and value of the queen-cells that can be secured by the beekeeper depends entirely upon the cell-builders. This is the writer's conclusion after two years of experimenting on this particular point. We have all noticed that some mares will nurse a colt better than others; that some cows treat a calf kindly and will nurse it, whereas its own mother will not; that a certain brood sow can nurse twelve pigs better than another will nurse six. It is a question of individuality and behavior. We have the same conditions present in queen-rearing. Not all colonies are cell-builders. One will accept a batch of twenty cells and complete them all; another may not accept ten. It is up to the beekeeper and queen-breeder to determine to some extent at least which colonies it will pay him to use as cell-builders, the same as it pays the breeder of swine to determine which shall be his brood sows and which go to market. It is a business sense that prompts such action. We must specialize in order to succeed best. It is quite as easy to start one hundred cells and have ninety completed as it is to have only twenty-five completed. As it takes time to make the wax cell cups, secure royal jelly, and graft larvae, one should endeavor to get maximum results. To use the words of David Rankin, "Make every seed, every second, and every cent count."

FURTHER PREPARATION OF THE CELL-BUILDER.

In this latitude it is scarcely possible to have queens fertilized before June 1. The number of drones present up to this time is small, and no nuclei should be made before then, for the brood is chilled during the cool nights. As soon as the cell-builders have been decided upon, stimulative feeding should be resorted to in order to have the colony in the best possible condition. To help the cell-builder, frames of sealed brood may be given from other colonies. By June 1 the cell-builders mentioned had each twelve frames of brood, and more hatching brood was given from other colonies in order to secure a greater number of nurse bees. All these preparations might seem out of place if the usual method of dequeening the colonies were to be followed in starting queen-cells. But it will be seen by the reader that this extra work is not in vain.

PREPARATIONS NECESSARY JUST BEFORE BEGINNING COIONY FOR ITS SEASON'S WORK OF ACCEPTING QUEEN-CELLS.

A bee-escape board should be taken and spaces cut out as shown in Fig 1. A piece of wire screen the mesh of which is small enough so that a worker cannot pass thru is exactly fitted in the bee-escape board. Just before tacking on the wire a double Porter bee-escape is inserted. After the wire is tacked on securely a hole is cut at the opening of the bee-escape and the wire soldered on completely around the opening to prevent any possible chance of allowing a passage for the bees. In using bee-escape boards prepared in this way the natural temperature of the colony is disturbed very little. A bee-escape board made entirely of wire is not so satisfactory, as it may sag more or less in the middle and cause trouble. A wood-and-wire queen-excluder must also be provided. An empty hive body is taken, and a one-inch hole bored in one end to one side, as shown in Fig. 2. A small alighting-board should also be nailed on to assist bees in leaving and returning to the hive.

Two days before the colony is to begin its season's work of accepting queen-cells the final preparations are made. Fasten the bee-escape board to the bottom of the

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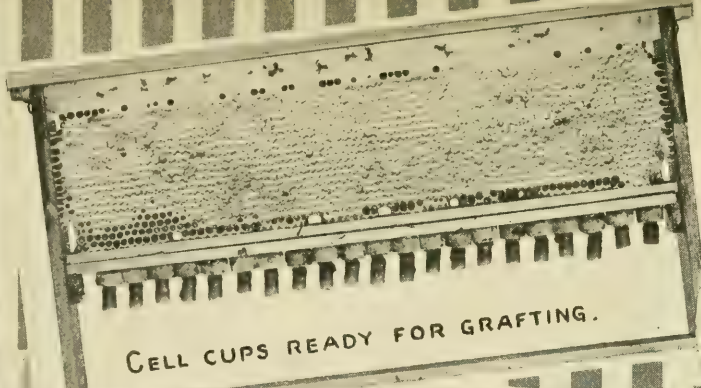
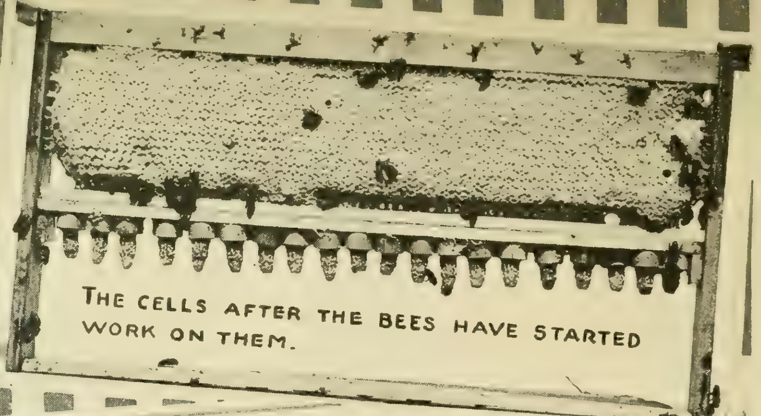
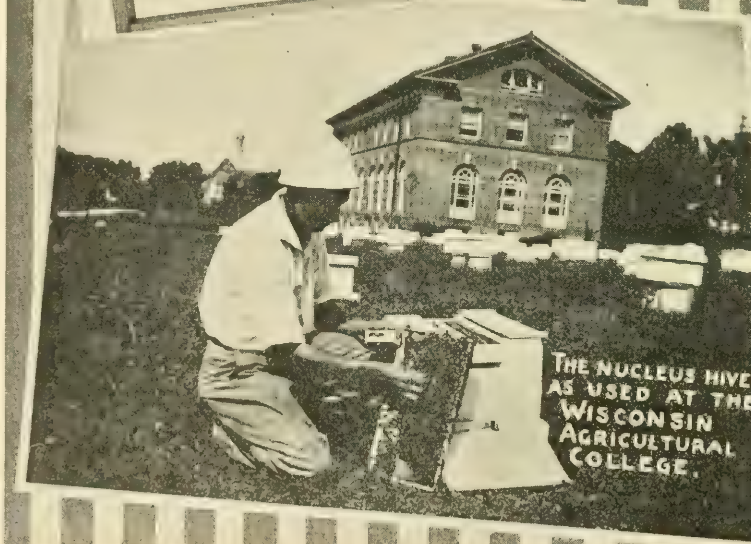
* Work done to be absolutely accurate; all these preparations perhaps not necessary ordinarily.



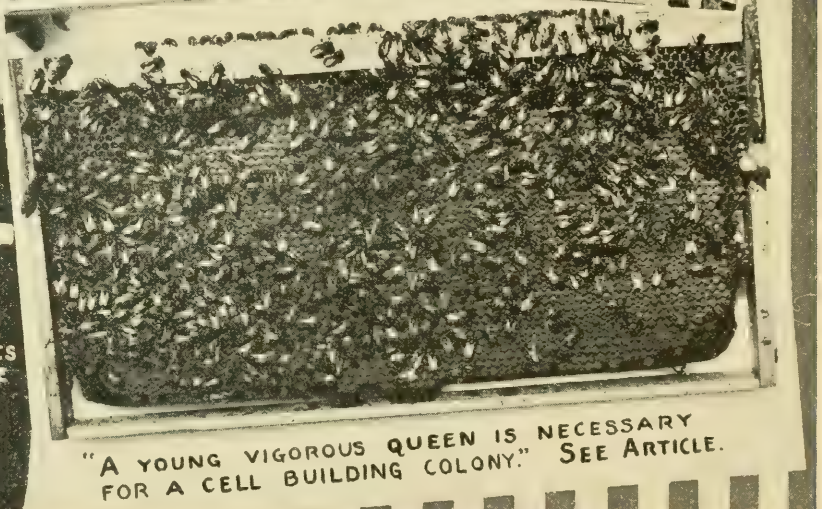
CELL CUPS READY FOR GRAFTING.



THE CELLS AFTER THE BEES HAVE STARTED WORK ON THEM.



THE NUCLEUS HIVES AS USED AT THE WISCONSIN AGRICULTURAL COLLEGE.



"A YOUNG VIGOROUS QUEEN IS NECESSARY FOR A CELL BUILDING COLONY." SEE ARTICLE.

prepared hive body just described, making sure that the bee-escape board *is inverted*—that is, is placed in position just opposite the usual method. The reason for this will be explained later on. Remove the extracting super or supers from the colony, as the case may be, and find the queen. Remove all of the combs of sealed brood from the brood-chamber, and in their place insert empty combs. Place the combs of brood in the prepared hive body, making sure that the queen is left in the brood-chamber. If any combs of sealed brood are present in the supers, set them out against the hive. Shake the bees from most of the combs of unsealed brood into the prepared hive body which has the bee-escape board attached to it. Fill the remaining space left with more combs of sealed brood. See to it that the original brood-chamber is filled with combs of unsealed brood or empty comb, and attach an Alexander feeder. Place a queen-excluder over this brood-chamber and set the prepared hive body containing most of the bees and all the sealed brood on top with the one-inch entrance *opposite* the front entrance. This hive body will be more than filled with bees. The old bees will leave by way of the small entrance and return to the original front entrance of the hive.

ADVANTAGES OF THIS PLAN.

Queen-breeders all know that the greatest number of finished cells can be secured if the cells are started in queenless colonies. The great question that arose in the mind of the writer is, "How can a condition of queenlessness be had without in any way reducing the strength of the colony, or how can a condition of queenlessness be had without dequeening?" The procedure just described is the solution to the problem. If brood is present in a super, and a bee-escape board is inserted, some bees will pass thru the escape, but the brood will not be deserted. Consequently there is a sufficient force of bees present in the *brood-chamber* of the cell-builders at all times. It is known that young bees will pass into the supers quite readily, especially if the colony is strong. Consequently, each day a large force of nurse bees pass thru the excluder and bee-escape and find their way into the hive-body above, where the queen-cells are to be accepted. These young bees cannot return to the brood-chamber below; and knowing no other entrance than the small hole at the back of the hive body, they return to this entrance after they have become field bees.* The sealed brood in the frames above the brood-chamber soon begins to emerge and this brood-chamber is "boiling over" with bees all the time.

FURTHER MANAGEMENT OF THE CELL-BUILDERS.

If the honey-flow has not begun, the cell-builders must be fed a little each evening. A separate Alexander feeder must be used for each half of the hive, care being taken to close all openings made in attaching the feeders. Every two weeks frames of *sealed brood* are taken from the brood-chamber and transferred above the excluder, filling up the space there left with empty combs. As soon as the main honey-flow is on remove combs of honey once a week from both hive bodies, filling the space left in the brood-chamber with empty comb and the upper hive body with sealed brood. Since there is always a large amount of empty comb present in the brood-chamber, the queen will be kept laying to her full capacity, and the colony also will have no intention of making preparations to swarm, even tho confined to one hive body. As the honey-flow draws to a close, the colonies should be fed in order that no risk be taken, and the maximum number of cells will always be accepted.

ADVANTAGES OF THIS METHOD.

Not all colonies are cell-builders, and by this simple plan the queen-breeder can confine his entire efforts to one, two, or three colonies during the entire season, and secure an ample supply of cells at all times. It may be well to state here that these colonies are not used to "finish" the cells, and this will be mentioned again in detail.

The upper hive body is always overflowing with nurse bees. The small entrance keeps the bees in a very crowded condition, bringing about the "swarming fever" at all times; but having no queen, they will never swarm. All beekeepers will concede that the best queen-cells are secured under such conditions. At times a peck or more of bees would be clustered outside around the small entrance at 7 A. M. During the middle of the day the entire back of the hive was sometimes covered. The great advantage and beauty of this system is that the cells are accepted *every time,* even during rainy weather and when the nights are cool. It does not seem to make any difference, and the cells are accepted *every time.*

PREPARING THE WAX CELL CUPS.

Heretofore it has been advocated by many queen-breeders that the artificial cell

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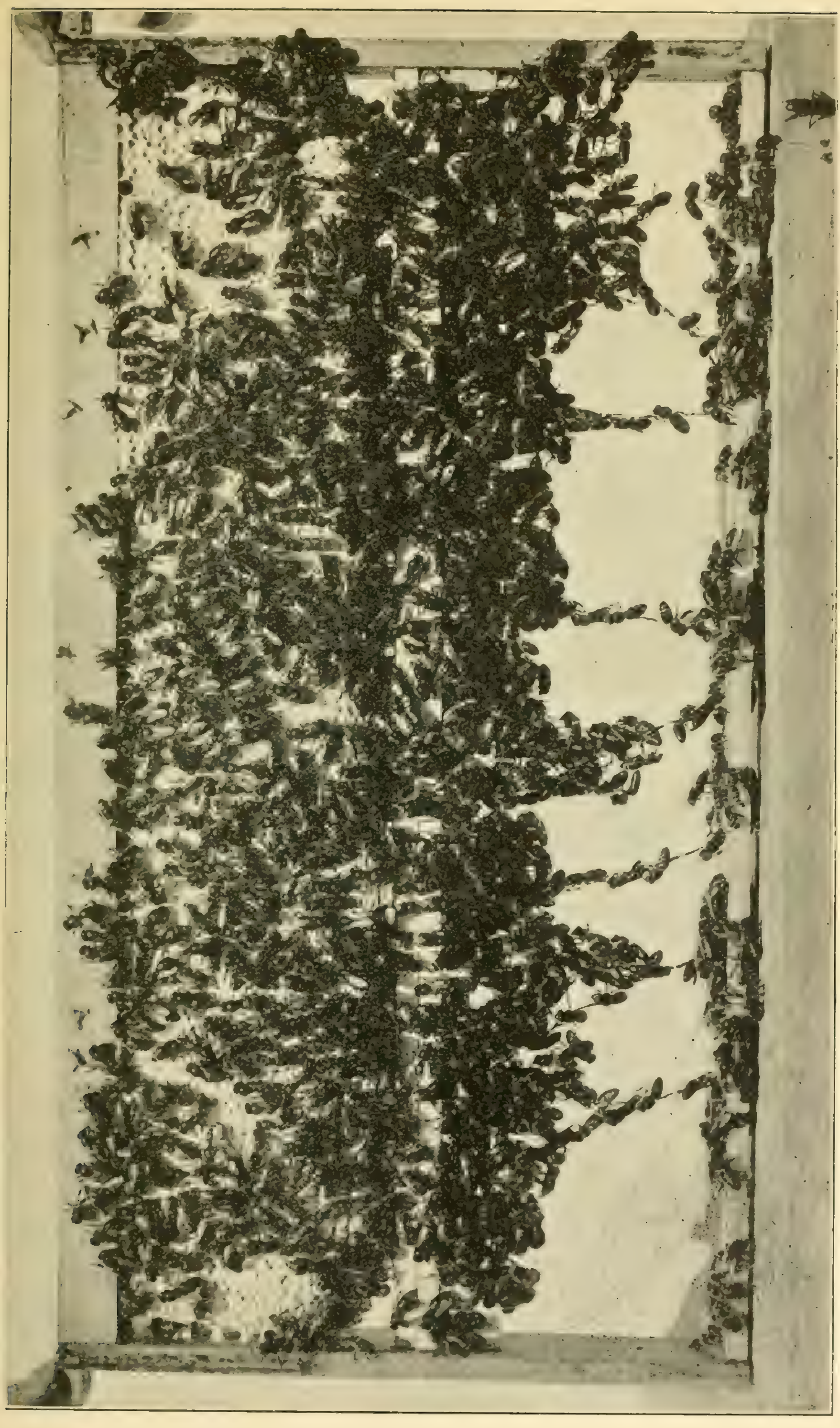
* I will admit that bees will not pass nearly as readily up thru a bee-escape as down, yet some will pass thru. But even tho not a single bee passed thru the escape-board the entire summer, the plan would work equally well.



Not all colonies are good cell-builders.

cups should be only about three-eighths of an inch in length. It has been the writer's privilege to carry on extensive experiments within the past two years to determine which size will give maximum results. Several thousand cells were started during this time, using various lengths and sizes of cell cups. Cells of different sizes and lengths were given to the same colony under various weather conditions and the results recorded. Cells were also alternated on the same cell-bars. The conclusions derived from these experiments are as follows:

The greatest number of cells are accepted and completed when seven-sixteenths of an inch in diameter and from three-fourths to one inch in length. (These sizes are for cell cups before being given to the bees.)

Cells three-fourths of an inch in diameter and larger were found never to be accepted, as well as cells under one-fourth of an inch in diameter.

Cells three-fourths of an inch to one inch long, and seven-sixteenths of an inch in diameter, were found to be capped over sooner than any other size. Little wax must be supplied by the bees, and cells of such size are therefore more inviting.

The cells are usually larger when completed than when drawn out from cell cups only three-eighths of an inch long.

The virgin queens that hatch from such cells are, as a rule, larger than from the smaller cells. Such queens are undoubtedlv better fed, since more room for royal jelly is present in a large cell.

PREPARING THE CELL CUPS.

In preparing the cell cups the usual methods as given by Dr. E. F. Phillips and Doolittle may be followed. The only precaution to take is to get the edges of the cell cups *very thin.* If the edges of the cell cups are thick (such as machine-made cell cups) the percentage of accepted cells is not as great. This has been fully determined by the writer in experiments covering two years of time, and involving the starting of hundreds of cells. After the cells are fastened to the cell-bars they should be placed in a colony for polishing out. Care must be taken not to leave them too long, ten to fifteen minutes being a sufficient length of time.

STARTING THE QUEEN-CELLS.

It is not the intention of the writer to give directions for grafting larvae, etc., as this is very adequately described in the standard works on queen-rearing. However, the ideal conditions present in the cell-builders make the work more simple than usual. Not more than a portion of royal jelly the size of a pin-head is necessary for each cell. In fact, one good-sized queen-cell will furnish enough of the jelly to start forty to fifty others.

Before placing the bar of cells in the cell-building colony, a cover should be made as follows: Take an ordinary Higginsville cover and cut it exactly in two lengthwise. Take a piece of wood about four inches wide and the exact length of the cover, and place its edges so that it will fit exactly between the halves of the cover when pushed together. The object in using a cover in sections is that, when the frame holding the bar of prepared cells is inserted in the center of the cluster, less disturbance is caused, and fewer risks taken in not having the cells accepted. One, two, or three bars of cells can be started at once; but undoubtedly better queens are secured where nurse bees can confine their entire attention to one bar of cells. When the brood placed in the upper hive body is practically all sealed over, the nurse bees can confine their entire attention to the one bar of cells given them, with the result that they are practically all accepted, or at least over ninety per cent for the entire season. By what other plan can the same results be realized? The beauty of it is that they are accepted *every time.*

In moving sealed brood to the upper hive body, it sometimes happens that two or three queen-cells are started from unsealed brood. If this happens they must, of course, be destroyed in order to prevent a queen from emerging.

At the end of twenty-four hours, the accepted bar of cells is placed in another colony to be "finished." After the cells are once accepted they can usually be completed very nicely in a colony above a queen-excluder. When the cells are "ripe" they are ready to be inserted in a nucleus, and the queens emerge there or can be placed in nursery cages.

It might be well to mention what success has been had by this method of using the Alley plan of starting queen-cells. The results are exactly as good. Early in June I had 42 queen-cells started on one comb using the Alley plan. The comb was cut in several places, and every other larva lifted out along the cut edges. On the lower part of the comb, or next to the bottom-bar, 23 cells were started, counting both sides, and 19 other cells started on the rest of the comb. Many other good results were had, but this particular instance was the record. As settled weather came on, only the Doolittle method was used.

DESCRIPTION OF NUCLEI USED AT THE WISCONSIN AGRICULTURAL EXPERIMENT STATION.

The nuclei hives, as designed by the writer at the Wisconsin Agricultural Experiment Station, provide for three nuclei in one ten-frame hive body. In Fig. 3 is shown these nuclei hives in actual operation. One entrance is had at each end, and one from the side. In the picture the middle nucleus is open while the other two are left closed. This is accomplished by providing for three inner covers that will exactly fit over the three compartments. In this way no mixing of queens or bees is had at any time. A regular cover fits over the inner covers at other times.

The so-called "baby" nuclei are not practical under Wisconsin conditions. This conclusion must be drawn after two years of work with them in this state. In the spring they are not populous enough to keep up a normal temperature during the cool nights; and after the first of August they are rapidly depleted for the same reason. Owing to the cool nights the three-frame nuclei have been found to give the most satisfaction. Since there are three nuclei in one hive body, the temperature is kept very constant.

The mating of queens is very uncertain during cool weather, and far more favorable conditions are provided for northern queen-rearing by using nuclei of the size mentioned.

There is also very little loss of queens in mating, as the entrances to the nuclei are all on opposite sides of the hive body. Another advantage of the three-frame nuclei is that they are always very strong, and can be kept so with ease. At the end of the season, if several are united they build up into fair colonies and can be wintered successfully.

RECORD OF CELLS.

In order to give the reader a better conception of the success that has been had by using the methods here outlined, a portion of the record of the two cell-building colonies used at the Wisconsin Agricultural Experiment Station during the season of 1916 is here given. It will be seen that the results are very uniform, and that, if an average were taken, it would be found that a total of more than ninety per cent of the cells were accepted during the entire season. This record takes into account cool nights when the temperature was very low outside the hive and rainy weather. On one or two occasions the bees did not enjoy a flight for two days, yet the cells were accepted as well as under the most favorable conditions.

Date	No. cells started	No. cells accepted and completed
July 1	16	15
July 3	16	14
July 6	16	16
July 6	16	12
July 7	16	13
July 7	16	15
July 7	16	12
July 8	18	16
July 8	19	19
July 9	18	15
July 9	18	15
July 10	13	12
July 10	13	12
July 11	18	16
July 11	14	14
July 12	18	16
July 12	18	16
July 13	18	17
July 13	18	18
July 14	18	17
July 14	18	16
July 15	18	16
July 15	18	16
July 16	18	14
July 18	18	17
July 19	18	15
July 19	18	17
July 20	18	18
July 20	18	17
July 20	18	17
July 22	18	18
July 22	18	17
July 23	18	18
July 23	18	17
July 23	18	17
July 25	14	12
July 27	18	17
July 27	18	18
July 27	20	20
July 28	18	18
July 28	18	17
July 29	18	16
July 29	18	18
July 30	20	19
July 30	19	17
July 30	18	18
July 30	20	18
July 31	20	18
July 31	18	18

Results for August were similar.

FINAL CONCLUSION.

The method for rearing queen-bees that has been here described is applicable just as well to the man who owns a few colonies, operates large apiaries, or makes a business of queen-rearing from a commercial standpoint. It will appeal to the beekeeper who owns only a few colonies, in that he is never compelled to dequeen a colony to secure cells for requeening or making increase. To the extensive beekeeper it means time saved. The professional queen-breeder can confine his entire efforts to a few colonies; whereas, heretofore he was obliged to use a large number of colonies thruout the season in order to obtain enough queen-cells to supply the many nuclei he operates. This method of obtaining desirable queen-cells ought to find a ready welcome in the practices of American beekeepers.

Later.—In looking over some of the back numbers I find an interesting discussion, Oct. 1, 1916, in which Mr. Kennith Hawkins finds fault with the methods used by some queen-breeders because they use queenless colonies and so have a large number of them on hand during the season that store little or no surplus. Mr. Hawkins also says that such colonies develop laying workers soon and are, therefore, useless.

To this I should like to say in connection with my plan, that neither is true, but that a colony operated as a cell-starter or cell-builder in the way I have described will yield among the maximum of surplus honey, and not develop a single laying worker all summer. While Mr. Hawkins' method is better than some, yet I cannot quite welcome it, since he does not know that the young bees that he shakes from another colony come from a queen whose progeny are cell-starters or cell-builders. I have proved pretty well that every colony does not have those characteristics, even tho subjected to the most favorable conditions. If the queen-breeder finds a colony that is a good cell-starter he should keep that colony intact; for to dequeen it would be a shame when we can use more satisfactory methods.

As I see it, not considering the essentials of a good breeding queen, the four greatest requirements in starting queen-cells are as follows: 1. Crowded conditions; 2. Young nurse bees; 3. High temperature; 4, Incoming nectar or its equivalent. All these conditions are provided by this new plan, and one or two are lacking by any other that I have any knowledge of. I will admit that in the South fewer failures would be had than in the North, on account of conditions here. When I thought out this plan and experimented with it I had Northern conditions in mind entirely; for to have cells torn down during cool nights is very discouraging. I speak now from the standpoint of the queen-breeder who wishes to start queen-cells for several months. Where a man wishes to rear only a few dozen queens he would not experience much trouble if he used any standard method; but because of the short honey-flow we enjoy, and the adverse weather conditions at times, I worked two years to perfect this plan.

A MARYLAND BEE-MAN

A Poor Man Starting with Only One Colony of Bees Wins a Farm, Home, and Family

By Samuel Cushman

IN Baltimore County, Maryland, 18 miles from Baltimore, is a man who loves bees and believes that beekeeping pays, and no wonder. A poor man, starting with one hive and gradually building up, he has learned to produce and sell comb honey and make much more than a living at it. With his honey money he bought an apparently worthless piece of land, planted a peach-orchard on it, and built a shanty in which he lived alone for years. He then constructed, with his own hands, farm buildings and a modern home to shelter the young woman who, of all others, was waiting for him. Now with a wife and two small children he is prospering as never before.

The interior of their home suggests that of the well-to-do town or city man. Here there are no milk-utensils to wash nor any suggestion of the cow-barn nor the early rising and other disagreeable features that often go with certain work on a farm. Beework and fruit-raising are comparatively clean work. But has there been no hard work done? Oh, yes! and lots of it. Years of lonely persistent work and much self-denial and economy have been practiced to attain these results in this line of rural industry.

The bees, however, made all this possible. They have been the main dependence, and are today; yet this beekeeper has never had as many as 200 colonies. He does not rear queens to sell. He rarely sells a hive of bees. He has never produced extracted honey. He does not receive retail prices. Comb honey sold thru a commission man has been his revenue producer. The returns from fruit never have been more than half of his income.

How did he do it? What methods have been followed? It is an interesting story. Follow me carefully and you will know. If he has done all this with bees, others, in the right location, can do it also.

STARTS WITH FRAME HIVES MADE FROM STORE BOXES.

Mr. N. W. James was living with his father not far from his present home, 28 years ago, when he first secured a poorly made Langstroth-frame hive of bees. At this time he knew nothing of bee books and magazines, and did not see any for three or four years, nor meet any up-to-date beekeepers. After that he had Root's A B C of Bee Culture and took two magazines—Gleanings and the *American Beekeeper*—and has read them ever since. They and his own experience taught him about all he knows about bees. He did fairly well with this one colony for several years, securing from 25 to 50 lbs. of comb honey per season. Then, being without capital, he made hives from store boxes and began to increase. In six years he had worked up to 40 colonies and lost 20 of them the following winter. As the location was low and sheltered, he had previously suffered very little winter loss. This caused him to study beekeeping in earnest.

CLEARS LAND AND LIVES ALONE IN SHANTY.

While producing honey on his father's place he bought, with honey money, a piece of land, not far away, covered with blackberry bushes, briars, and stumps. He cleared this land and planted a peach-orchard and built a two-story shanty, 12 x 16 feet. The ground-floor room served as a living and work room, and here he cooked his meals on a kitchen range. He slept in the room above, reached by a ladder and thru a trapdoor. This original building now serves as a workshop and honey-room. An outside stairway now gives more convenient access to the upper room. This building as well as the others was the work of his own hands except that he had the assistance of a carpenter in raising the frame. The material of this building cost $100. When completed he moved his 50 colonies to the place and made this his home.

LOST 100 COLONIES FROM FEEDING TOO THIN SYRUP LATE IN FALL.

He had been keeping bees for ten years, and, the season before, had increased to 110 colonies and bought 40 of a neighbor, and was obliged to feed winter stores to all. He did not know that he should feed thick syrup in late fall. He had increased too much, fed thin syrup too late in the season, and lost 100 colonies before spring from dysentery; had only 50 left to move to the new farm. This was a hard blow, but it did not stop him. In two years he had, with the hives and old combs, built up again to the same number, and started an outyard. He has since bought 11 colonies of his father. He dug his well and built the other farm buildings and his modern home at a time when there was no bee-work to do. That is, he did everything but mason work for the house foundation and the plastering, and had assistance in raising the frame. He did his own carpentering, lathing, finishing, and painting and papering. He had not worked at either trade, but just picked it up.

PEACH CROP HELPS.

With him the peach-trees gave a crop the third year after planting. They yield four seasons and then die. The income from the peaches, sold right on the place, has never been over half that from the bees. The latter have given more reliable returns than peaches.

FIVE BARRELS OF SUGAR FOR WINTER FOOD.

Occasionally the honey-flow is only enough, after surplus is removed, to breed bees, and all colonies will require feeding for winter stores. In the fall of 1915 he was obliged to feed five barrels of granulated sugar at a cost of $100, to carry the colonies thru the winter. All but two of the 162 colonies were alive in spring; but a few were queenless and had to be doubled up, leaving 155.

GAINS THREE AND A HALF TONS OF COMB HONEY AND 35 NEW COLONIES.

In 1916, from 155 colonies, spring count, he took off 6500 lbs. of comb honey and now has 190 colonies—a gain of 35 colonies and 3½ tons of comb honey. His best grade comb honey netted him 15 cts.; second grade 13, and culls, unfinished and dark, 11 to 12½ cts. per lb., an average of 14 cts. Last fall no fall feeding was required, as all colonies filled up from an

N. W. James and family.

extra good flow from fall flowers—goldenrod and asters. It will be interesting to know how these got thru the winter.

OBLIGED TO GET ITALIANS.

Formerly he kept black bees and preferred them because they capped their honey whiter; but European foul brood forced him to keep Italians. He secured some of the best Italian stock, and found a great difference in the various strains of Italian bees. Some queens gave workers that were great honey-gatherers and very gentle, but they built comb-cappings against the honey so it partly showed thru. He now prefers bees that have a little black blood, the progeny of an Italian queen that has mated with a drone from hybrid stock or Italian and black mixture. These are usually gentle, and easy to handle. Occasionally there will be a cross colony, but he requeens these. He usually uses swarm-reared queen-cells from the best old colonies that have cast a swarm, but does not requeen good colonies, no matter how old the queen, if they are doing well. He has some queens that are two and even three years old.

AVERAGE YIELD PER COLONY.

He has averaged about 50 lbs. of comb honey per colony, spring count, for the past five years, and always sells his crop thru a commission merchant. He does not risk shipping it by freight or express, but drives to Baltimore with it just as soon as he can prepare it for market.

TWO GOOD SEASONS TO ONE POOR ONE.

He counts on having two good seasons to one poor one in his locality or by his management. He believes in preparedness, and that doing the right thing too late has turned a good season into a bad one for many a beekeeper.

EIGHT-FRAME DOVETAILED HIVES PREFERRED.

Mr. James has been buying factory-made hives, eight-frame dovetailed, for the last 15 years, as it does not pay to make up hives from the lumber. If he were to start over again, however, and had no capital, he would make over store boxes again at the start.

He had run one home and two out apiaries for four years before coming on to the new place. He now has one out-apiary of 89 hives and 101 colonies in the home apiary, but will take part of the latter to a new outyard next spring.

OVERCAME FOUL BROOD.

European foul brood, which affected his apiaries eight years ago, disappeared after he requeened them in the fall with Italian queens or ripe queen-cells, after first making colonies broodless for ten days or two weeks. A few seasons later, 20 colonies showed it again in the spring; and still later one or two black colonies had it, but it has not reappeared since. He does not consider it a serious menace to the careful beekeeper, and believes that it will not injure even the honey crop if prompt measures are taken.

HARVESTING THE CROP.

He secures his comb honey in 4¼ x 4¼ x 1⅞-inch sections with two beeways. He does not like either four-beeway or plain sections nor the 4 x 5 x 1½-inch style, as combs are more likely to be injured in cleaning and crating. His commission man also advised him to stick to the kind he had been using, as they suit his trade best.

These are put on the hives in regular S supers with slatted wood separators, and three are used to a hive. Foundation starters, cut 2 x 3 inches, are used in the sections, instead of narrow strips. These, hung long way down, give three sides to work on, while a narrow starter gives only one edge. These will be built out as fast as full sheets. These supers of sections are all ready for the season's crop several weeks before the surplus flow, and one set is on the hives one week before it commences, and ventilation blocks are put under the brood-chamber, one at each corner. The first supers given always contain one or two rows of bait combs, sections having full combs or foundation well drawn out, left over from the previous year. These are sometimes moved to the outer rows after work in them is well started. When the first super is partly filled, another super with foundation sheets is put under it, and later, before the height of the honey-flow, another under that; but when the honey-flow is diminishing it is put on top. As soon as two-thirds of the sections in the first super are capped over it is removed and the unfinished ones are put back in another super. In removing supers of finished sections the bees are not smoked out nor brushed off from the supers. Porter bee-escape boards are used to clear the sections from bees, the finished supers being placed at the top, and the escape beneath it to allow the bees to return to the colony of their own accord. Bees that pass thru these escapes in only one direction can go out but cannot return.

FUMIGATES THE COMBS.

The combs are then fumigated with sulphur to kill bee-moth eggs. He prefers that to bisulphide of carbon. The latter does the work all right, but is highly inflammable.

DOES NOT TRY TO STOP SWARMING.

Mr. James does not clip the queen's wings nor try to stop first swarms. He expects them and two-thirds of his colonies to swarm. He watches closely for them at the home apiary between 10 and 12 o'clock during the swarming season. They usually settle on a limb and hang half a day before going off. He then spends one hour at the out-apiary to hive those that are out, and returns to the home yard in time to get the afternoon swarms. Sometimes they hang from afternoon until the next morning. This ties him right up to his apiaries in good weather during swarming time. He rarely has a swarm go off. Some come out as late as 2 o'clock on very warm days, but usually not often after 1 o'clock. He often has to climb trees to secure the swarms. The limb they are on is partly sawed off near the tree; and as it breaks half thru and swings down he can reach, cut off, and descend with the branch having the swarm.

One of Mr. James' apiaries in a forest.

PLACES NEW SWARM ON THE OLD STAND.

He hives them in a new hive placed on the old stand and puts the old colony on one side. The surplus-honey supers are transferred to the new swarm on the old stand, which will receive all the working force. In one week he moves the old colony to the other side of the new swarm, to give more of the workers to it. Very seldom do second or after swarms issue from the old hives unless he lets them stay too long without moving. He does not have to open old colonies nor bother about queen-cells, as they are so weakened that the first queen hatched is allowed to kill the rest.

GETTING RID OF DRONE COMB.

Sometimes he hives the new swarms on brood-frames hatching foundation starters, altho he prefers full sheets of foundation and one or two drawn-out combs. When starters are used, and if some drone comb is built in the frame, it can be cut out with a can-edge cutter, and worker comb cut in the same way fitted in to replace it.

NO QUEEN-EXCLUDING HONEY-BOARDS USED.

Large heavy swarms are given double brood-chambers in very hot weather, which are left two or three days; then supers are put on and one brood-chamber taken away. Plenty of ventilation and room are given the first few days. He has never used the queen-excluding honey-board, and has had no serious trouble with pollen or brood-rearing in sections.

YARD IN FOREST-CLEARING DOES BEST.

Mr. James' outyard, two miles from his home, is located in a small clearing in a forest of small trees, and within sight of a dwelling. This place is warmer and more sheltered from the wind than the home apiary. Here the bees fly out earlier in the spring and later in the fall with safety. A hundred yards away, below it and under a steep bank, sloping to the south, is a small brook to which the bees have easy access. In spring they are found lined up by the hundreds at one time, taking water, and they fly back and forth thru the trees out of reach of cold and wind. They always come out in spring in better condition than the home apiary, which is on a bleak hill.

IMPORTANCE OF NEAR-BY WATER SUPPLY IN SPRING.

The importance of having water within safe distance at that time is realized by Mr. James' remark that his home apiary, at that season, takes a gallon a day from a water-fountain placed among the hives. The danger of spring dwindling would evidently be much greater if they had to fly half a mile or more, exposed to chilly winds to get water. He has fed ground wheat out in the open in early spring as a substitute for the natural pollen, and favors it.

SOURCES OF SURPLUS HONEY.

His first surplus is secured from locust blossom, which commences about May 15, or about two weeks after apple blooms. The bloom from the tulip or poplar tree follows, or blooms about the same time. White clover commences to bloom about May 25, and lasts thru June and into July, altho none is stored in sections in July. Considerable honey is gathered from daisy blossoms; but the yellow-daisy pollen brought in with it colors the finished white-clover sections unless they are removed promptly.

A CORNSTALK WINDBREAK.

The home apiary is on a slope somewhat under the hill, and sheltered on the north by a thick wood. A rail fence on the edge of the wood and around one corner of the yard on the west has been made to serve as a windbreak by standing up bundles of cornstalks thickly against this fence. As Mr. James observed, this was not much for looks, but "handsome is that handsome does." Here the hives are five or six feet apart, and the rows about eight feet from each other.

TAR-PAPER COVERING FOR WINTER.

When colonies succumb in the winter here they have been those furthest from the forest and windbreak. Those in this part of the yard have, besides the half-story of chaff on top, a covering of tar paper tied around with a cord. This protection has given very good results in the past on a few hives, and will be tested out this winter on a larger number.

KEEPING A LARGER NUMBER.

I asked Mr. James why he did not have more colonies. He replied that he gets about enough to do, without help, with what he has, and wants to change off on other work. He is about exhausted at the end of the honey season.

I asked if he could not save the time taken watching for swarms, and avoid climbing trees for them, by clipping all queens and making all swarms artificially by shaking or brushing, thus leaving them in about the same condition as after natural swarming, and in this way save work and time, and then take care of more colonies. He has never tried this but intends to on an outyard next season. Asked if he con-

Continued on page 150.

OUT - APIARY EXPENSES

The Importance of Keeping the Most Accurate Account of all of the Necessary Overhead Costs

By R. F. Holtermann

THE question of out-apiaries and their desirability may be looked upon from many standpoints, and yet the experience of any one beekeeper must of necessity be limited. Localities vary, seasons vary, the bees vary, and perhaps, more important than all, the beekeepers themselves vary. I am running seven apiaries, and in a good season there are enough bees to satisfy the desire of a pretty ambitious man. On the other hand, if the season is poor I have far more bees than enough, and the poorer the season the worse off I am, and the greater the loss. It is still a question in my mind if, instead of extensive out-apiaries, it would not be more profitable for a beekeeper to own his own home and ground, to keep several cows, a limited number of chickens, to have a good garden supplying first-class vegetables — enough for his own use and some besides—then have his bees on the same place where they can be cared for at the least expense. There is a great saving in labor and time in having the bees in one place, and that in the home apiary. Time and again there are things that I should like to do or to look after that are impossible because I am not on the spot, and conditions might change by the time I could get there.

If the beekeeper is isolated from other bees so that there is a range of, say, two miles in every direction, and if he is in a good locality, I doubt whether it pays to split up an apiary short of 200 colonies. In saying this I take it for granted that the readers of GLEANINGS all know that overstocking is felt particularly at the time that the bees are building up for the surplus honey-flow — in this locality, during the blooming of soft and hard maples, dandelion, and fruit.

THE COST OF THE GROUND.

In establishing an out-apiary some rent or its equivalent must be paid for the location. I know that locations are sometimes offered rent free. I have had such offers, but have never accepted them. In any event it is not a legitimate way of calculating the expense of the undertaking. It may be foolish for me to mention what I pay a year for enough space to put an apiary. Some may say it is too much, others that it is too little. I pay $20 a year for a suitable place to put an apiary, preferably an apple-orchard, and for a place to extract and store supplies. I never agree to give away any honey; but if I get a fair crop the owner of the land gets 60 pounds of honey, or sometimes even more.

THE COST OF TRANSPORTATION

A conveyance must be supplied, and a conveyance costs something. If one has horses he must keep track of the time used and divide the cost proportionately—so many days in the garden, so many days for the bees, so many for family use, etc. I enumerate every outlay, expenditure, and returns. Merely to say that I have a conveyance anyway, so it costs me nothing, is not sound business reasoning. It would be like charging the first boarder for rent, heating, and other overhead expenses, and then figuring the cost of the other boarders merely on the amount of food consumed.

The cost of running an automobile varies considerably. I think that many, in their desire to tell a good story, inadvertently deceive themselves and others. Some drivers can smash an automobile in five seconds and never know it. Another can run them for five years and never have an accident. I have found that with an auto it is necessary to attend at once to anything that goes wrong. This is a good rule to follow with any machinery. There are no superfluous parts about a good machine; and therefore if only one screw or bolt is out of commission it means added strain on some other that is not expected to do double duty. If I pay $1000 for an auto I must charge $60 a year interest against the business, and also a further charge to take care of depreciation in value. How much does an automobile depreciate in value in a year? The question is not so much what my opinion is, but what the value of the machine is on the open market. A $1000 machine with average wear will usually depreciate in value $200 or more in a year. I bought a machine that had been used for demonstrating. It had an exceptionally good engine. The price when new was $1200; but after it had been used one season for demonstrating I paid $850 for it. In this way I did not lose the first great depreciation. The machine is run mainly on stiff clay roads. The country is fairly level; but when wet the roads are dreadful, and at times almost impassable. This is a serious handicap for automobile travel—very hard especially on the tires, because the ruts, when dry and hard, cut the rubber badly. We have used up four or five outer cases every season since we have had the machine. Five last year cost us over $150. Then there is the gasoline, oil, overhauling, and other repairs. There is no use in underestimating this kind of expense. Many do; yes, some business men always underestimate the costs in their business. But unless these expenses are put down accurately the cost will be underestimated.

It takes some time to go back and forth to the out-apiary. We have a truck of 1500 pounds capacity, which cost when new $1200. I bought it after it had been used three seasons by a grocer in the city, paying $750 for it. It is very valuable for a short time in the season for out-apiary work, but it scarcely has enough to do to distribute the costs connected therewith. Furthermore, it takes a good deal of gasoline and oil to run it. However, it is certainly a fine thing to be able to back into an apiary and feel sure that the bees can make no trouble.

CONVENIENCES AT HOME YARDS.

Snowstorms, windstorms, varying winds and changes of temperature, especially in the spring, all demand changes in the apiary, or possible changes. Entrances may need adjusting perhaps even twice during the day. If there were only one apiary, and that at home, and run on a plan to prevent swarming, the chance for a swarm to issue would be so small that it would not be necessary to examine the combs regularly for the queen-cells. Six days in the week I should be on the ground to catch any swarm that might issue. In case of out-apiaries which I can visit only one day in the week it is an entirely different proposition.

In the spring, when the buds begin to swell and the bees fly almost every day, if I had a home apiary only I would put out a large feeder containing syrup made of ten or twelve parts of water to one of sugar so the bees could help themselves quietly and yet not get excited.

This plan can not be followed at out-apiaries, for a "greenhorn" can not do such work as a rule. Then with the out-apiary there are the queen-cells to look after. If there is only one apiary, the beekeeper, being constantly near it, knows what is going on, and is in much closer touch with his business.

MANAGING THE OUTYARDS.

When it comes to the management of out-apiaries I like to have the bees packed on their summer stands four in a group, leaving the packing on all the time except during hot weather. The entrances may be in any direction if the yard is sheltered from the winds; but it is best to have the front of one group face the sides of the next group in order to prevent drifting and help the bees in locating their own hive.

I much prefer shade during the hottest part of the day. Apple trees properly pruned are excellent for this purpose.

Large hives, which, if necessary, can be contracted with a division-board, are my preference. I use a 12-frame Langstroth hive. I do not want to crowd the bees too much, particularly during the early part of the flow. Large entrances at the proper time are necessary in my management.

In conclusion I can say that out-apiaries complicate the work very much and increase care, responsibility, and anxiety to a thoughtful person. With so many bees left alone or with only novices about, having oftentimes poor judgment, I often feel very anxious during critical times.

Brantford, Ontario.

Iowa Beekeepers' Convention, held at Des Moines, December 5 and 6.

J. L. BYER, THE BEE MAN

How Success has Come to a Man Without Capital but with Abundant Energy and Enthusiasm

By E. R. Root

SOME little time ago the editor happened to make some favorable comment concerning our special correspondent Mr. J. L. Byer, of Markham, Ontario, Canada; of how he had started in his apicultural career from the bottom round of the ladder until he was now one of the largest and best beekeepers in all of Canada; of how he had raised a family, sending some of the older children away to school. He came back with a private letter saying that he did not deserve the good things we had said of him; that his beeyards were not models of neatness, and that he had all kinds of hives and equipments; and he was afraid that after the puff given him some of his fellow-countrymen would call on him and go away feeling disappointed. As to "having raised a family," Mr. Byer said it was somewhat of a joke, as he is still raising one, a pair of lusty twins having come to his home about six months before the time of our visit.

This letter of protest about a heterogeneous lot of hives from our correspondent made us all the more anxious to see the man at his home and yards; and so, accordingly, after a preliminary conference with the attorneys in the case of the beekeepers versus the smelters at Thorold, Ontario, we took occasion to run up to Mr. Byer's place. We had given him no previous intimation of our coming, and so we called him up from Toronto on the long distance to see if he were at home. "Sure enough, I knew your voice," he said. He was surprised but yet pleased to know that we were coming up to see him. He met us at the train with his Studebaker—a comparatively new machine, and took us out to his home lickety-splash, for the roads were wet and muddy.

Mr. Byer is now living in a brand-new house with all modern conveniences and equipments. The bees, the automobile, the home, were all paid for out of the proceeds from his bees. Perhaps our correspondent will not thank us for saying this much; but it is only fair to say that his beekeeping is of a kind that spells success.

When we expressed a desire to see his beeyards he readily assented to taking us out, but remarked that we would not find things looking as nice as at Medina.

"Never mind," we said. "You have apparently made a success of the business."

We went out to the Cashel yard, about four miles away, and we found it, as Mr. Byer had said, provided with hives of all styles—some that he had bought up of beekeepers at various times. The frames at each yard are all of a size however. While he endeavors to keep each equipment of a kind by itself, it was not possible for him to do that in all cases. The bees in this yard were packed in double-walled hives, one colony to a hive. He admitted that the quadruple case for holding four hives was all right, but it took a long time to pack the bees in such cases, and he rather preferred the individual double-walled hive and the two-hive winter case. Over half of his bees are packed two in a case.

Fig. 1 shows the Byer hive that had been made by his grandfather. Bees wintered in them well, notwithstanding there was only two inches of packing between the walls. He uses absorbents; and in looking into some of the hives we found the bees were in fine condition with an abundance of stores.

"But," we remarked, "don't you think you would use less stores if you used more packing?"

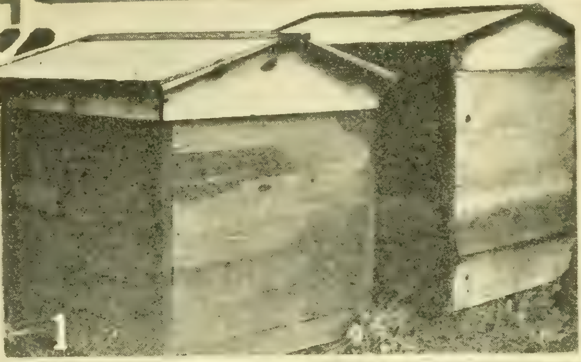
"Perhaps," he replied. And then he said he had about 25,000 pounds of nice clover honey on the hives slightly flavored with buckwheat for which he could get 8½ cents a pound. He admitted that he might be able to save some of this honey, but it would mean an entirely new equipment and some extra labor in packing and toting these big hives around from yard to yard. He was not sure that he would care to change. Mr. Sibbald, he said, who was credited with being one of the best beekeepers in all Ontario, was using the Alpaugh-Holtermann winter case, and liked it.

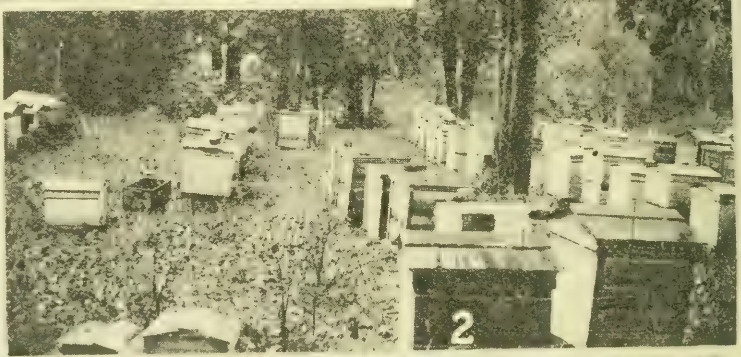
The reader's attention is directed to the style of cover, which is made of common shingles and a ⅞ piece to make up the ridge-board—very simple; see Fig. 1. Mr. Byer is inclined to think that sheet metal as shown in the foreground, Fig. 3, is cheaper.

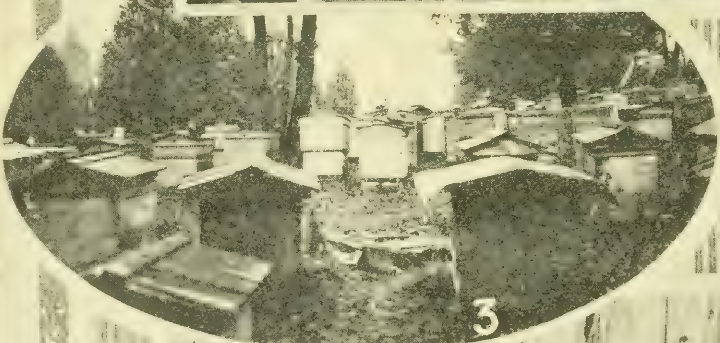
The Cashel yard that we were visiting was nearly surrounded by a windbreak of woods. A large amount of alsike is grown in the territory, and the location is ideal.

In the afternoon we drove over to the Markham yard, located on Rouge's Hill, a little way outside of the town itself. There is hardly a prettier location in all Canada. It is at this yard that Mr. Byer and his friends sometimes hold picnics.

Fig. 2 and 3 are general views of this







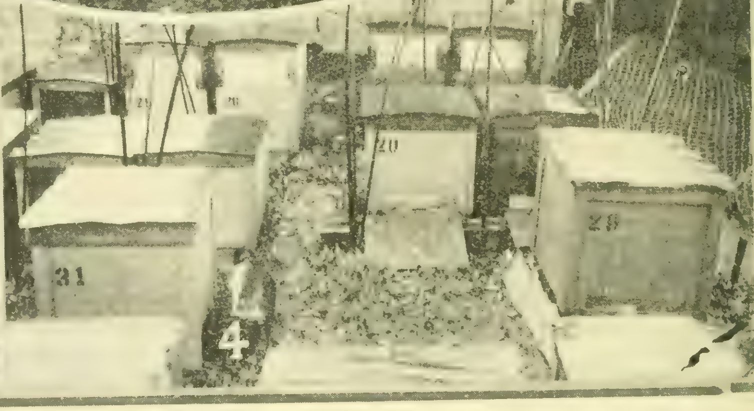


Fig. 1.—Byer's double-walled hive. The cover is made out of common shingle. Fig. 2.—Byer's Rouge Hill, near Markham, Ontario, Can. Fig. 3.—Another view of the same yard, showing the flat tin roofs in the foreground. Fig. 4.—C. W. Hellen's apiary from a start from pound packages. With 17 pounds of bees, each with a queen, he secured 1800 lbs. of honey and left the nice little apiary ready for winter.

particular yard. About the same kind of hives and equipments are used for all the yards, so a view of this apiary will serve to show them all. The reader will notice that there is nothing particularly dilapidated in this yard, which is a fair sample of all of them. The main thing is that the colonies are all in fine condition. Regular Jumbo hives are shown in the foreground, with others of a different type in the background. Mr. Byer is using eight and ten frame Langstroth hives, and also at his Cashel yard hives even deeper than the Jumbo. He therefore has an excellent opportunity of comparing the relative merits.

We have asked him to tell in one or more articles of the good and bad points of all his hives. He admits there are some peculiar advantages in favor of the Jumbo hive, both for the production of honey and for keeping down swarming. The entrances of these big hives, however, were about 1 x 3 inches.. When we asked him if the mice did not bother him he said they did not, because he kept strychnine scattered around in each yard. We asked if it would not be an advantage to have larger entrances as recommended by the Dadants. "Perhaps" was his reply. But he has not had any trouble from these entrances.

It is true that Mr. Byer started in a small way. He bought 27 colonies, giving his note for $108.* He wintered 25 of them successfully, procured a crop of honey, and, after paying off the note and putting his bees into winter quarters, he had $110 left. With this amount as a beginning he "bought more bees" and has been buying and making increase ever since, until now he has something over 700 colonies, and colonies they were, mind you. He gives his wife credit for much of his success, as she has been a good home-maker and has put in many hard days with the uncapping-knife.

The past season was Mr. Byer's best. He is not giving out to the public what he did; but we will say this: A man must be something of a beekeeper who can take the equipment that he has, consisting of big and little hives, some of them thirty or forty years old, and get the crop he did and does get from year to year. While location, no doubt, plays a very important part in this case, the hives could not and would not do it. We must, therefore, give credit to the man and his methods.

SAN JOAQUIN VALLEY

The Enormous Waste in Parts of California. A Great Opportunity for Progressive Beekeepers

By Florence B. Richardson

MANY eastern people are coming into the San Joaquin Valley of California each year, and many more would come if they were assured of a living. Not every one is adapted to the bee business as a single source of income; but thousands more colonies could be profitably kept by diversified farmers if they but realized the fact.

Bees are not only profitable on the honey count but are of inestimable value to the great orchards thruout the country, yet there are orchards of many thousands of trees in this valley with no bees at all, and many more with only a couple of hives. To be sure, the orchardist himself has little or no time to attend to them; and if any are kept, the women of the family are the owners. If there were any big beekeepers near they would doubtless be glad to use the borders of the orchard as an out-apiary for the blooming period.

The first thing that every Easterner notices in California is the waste—waste of everything; fruit under the trees, lying in heaps as it has fallen. that in the far East would be considered very usable; watermelons lying in windrows in the fields because it doesn't pay to pick them up for marketing late in the season; enough vegetables to supply a city, going to waste in every town, and *no one* seems to be worrying about it. In fact, when the Easterner who has undoubtedly been used to getting a small amount of fruit for a large amount of money, speaks of this waste, the inhabitants look pityingly at so daring a person, and stamp him at once as a new comer.

The finest Malaga grapes I ever saw, great perfect bunches that would weigh from three to five pounds each, and every single grape as perfect as a nursery-man's catalog picture, were being dumped into a hog-pen by the cartload; and when a protest was lodged by an onlooker fresh from New York the rancher smiled and said, " Oh! but they make the finest kind of pork."

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* Mr. Byer says he told the man of whom he bought that he hadn't a dollar, and he did not know how he could pay for them. The old fellow looked at him a minute and said, "Young man, I have confidence in you. You give me your note and you will make good," and he did.

Another shock was to see great loads of peaches, many of which would measure from nine to twelve inches in circumference, being thrown in as feed in the same way.

Peaches brought so little last year for canning that they were mostly fed to the hogs, or were left to rot on the ground—only the very finest clings being shipped to market. This year, however, the peach-growers have organized and now have the whip hand.

Watermelons bring so little, late in the season, that any one who wants them for feed can go to the field and pick them up for fifty cents a load, using his own judgment as to the size of a load. When the farmer can get but a dollar and a half a ton delivered at the cars, it doesn't pay him to bother with them if he has much of a haul.

The Santa Fe Railroad had home-seekers' excursions thru the great San Joaquin Valley last fall (1915), with the idea of showing people the possibilities of making a good living by settling in this fertile section of the United States. The very first words any of them uttered were in relation to the " waste " in California.

On the grainfields the grain lies so thickly in some places after harvesting that the wonder is that any of it found its way into sacks. Of course it is fine feed for turkeys, and in some sections great herds are run after the harvester; but there are huge tracts of thousands of acres where a turkey never steps foot, and all that grain is plowed under in December or January when summer fallow plowing begins.

Alfalfa seems to be the only crop that is guarded closely, and of that there are tons of nectar going to waste each year because of the lack of bees. The main fields yield comparatively little nectar under ordinary conditions, as the alfalfa is cut for hay either just before or just as the first blossoms open, thereby not giving very much chance for collection of nectar. However, there are always lots of places that the mowing-machine doesn't reach on the edges of banks and levees, also in corners and against fences, and in poultry-yards. Again, in an irrigated country like this it is poor policy to have hay down in the fields when an irrigation is due, and the cutting is often delayed until the busy bees have made a good deal of honey.

The San Joaquin Valley is a big country in itself, and has a great diversity of crops from north to south. There are no sections (except those where grain is grown exclusively) but that provide more or less bee pasturage. The southern portion is much like the country Mr. Chadwick tells of; but as the central and northern parts of the valley are reached, alfalfa is king, and great herds of dairy cattle are found. Vast stretches of this country also raise alfalfa hay entirely to ship to the South, where land is too valuable for a hay crop.

The general topography of each section —south, center, or north— is much the same —foothills, floor of the valley, and bottom lands along the rivers.

The foothill sections have a great deal of orange, lemon, and other fruit-bloom, and sage and many other wild flowers to yield nectar, also lots of bees. The floor of the valley is the grape and alfalfa portion, with also great acreages of fruit-trees. Here, as well as in the foothills, are immense tracts of grain. Compared with the amount of available forage there are few bees kept on the floor of the valley.

The river bottoms are rich plunder, as the great variety of weeds growing give quantities of nectar for a long season. Here grow the flowers from which just about all the early brood is raised, for alfalfa bloom comes in much later than many of the nectar-yielding wild plants.

The almonds also give a good deal of early pollen, and possibly nectar, as the majority of the trees blossom in March. An almond-tree in bloom is about as beautiful a sight as one would ask to see; and standing in some lights, where a clear sky can be seen back of the trees, there is a continual rise and fall of insects going and coming from the blossoms. The almond is a shy bearer under certain circumstances; but with right selection of varieties and plenty of bees working for early brood-rearing, a good crop may be expected.

Queen-breeders are conspicuous by their absence also. Having occasion to secure a queen a year ago it was only after considerable trouble that such a one as was wanted was discovered. For every breeder in California there are ten in any eastern state, and yet there is good opportunity here for good breeding.

This is but a brief summary of the situation, yet I think that many will be able to see the possibilities of at least a paying side-line business. The women in particular on the ranches do not seem to be nearly so much alive to this opportunity as they might be, and are only making cents on chickens where they might make dollars with bees.

HOW THEY CAME TO US

A Book with Historical Associations That Throws Some Light on the Introduction of Italians

By E. F. Phillips

QUITE recently, in looking for another book in the beekeeping library of the Bureau of Entomology, I picked up a little book written by H. C. Hermann which immediately aroused interest. The book in itself is scarcely worthy of passing notice, but any one familiar with the history of the introduction of Italian bees in 1860 by Mr. S. B. Parsons will recall that he purchased these bees from Herr Hermann. These bees were shipped thru the port of Havre and reached here in April or May. The date is usually given as May, but some recent information indicates that it was really earlier.

The book in question was published by Leonh. Hitz at Chur, Switzerland, in 1859, and the copy at hand contains the book plate of the U. S. Patent Office Library. On the title page is an embossed mark "Patent Office Library." It was transferred to the Library of Congress and contains a rubber-stamp mark, "By transfer from Patent Office Library, April, 1914." It was then transferred to the Library of the U. S. Department of Agriculture apparently on January 12, 1915. It has been in the library at Drummond for over a year, but it never before came to notice. Probably there are some more treasures here which have not been unearthed.

One cannot but wonder whether the presence of this little book of 56 pages in the Patent Office is responsible for the fact that Mr. Parsons was sent to Herr Herman for the bees. It must be remembered that at that time there was no Department of Agriculture, but what work was done in agricultural research and exploration was supervised by the Commissioner of Agriculture, an officer in the Patent Office. The title page is enough to stimulate any one to want the bees described. The author reserves the right of translation*; but presumably after 57 years there can be no objection to a translation of the title page: "The Italian Alpen-bee, or the Gold Mine of Agriculture; a short and practical treatise, in order to introduce genuine, fertile Italian queens, for changing in a few months many hundred German bee colonies into Italians."

Furthermore, at the close of the book is a price list in which the author says: "I offer to worthy bee-friends at the following prices, payable in cash: A young yellow fertilized queen: From March 15 to April 30 with 500 bees, 20 francs; with 1000 bees, 22 francs; with 5000 bees, 35 francs, etc."

He reduced the price later in the season, and also charges 2 francs less for "queens which are less beautiful, young as well as old." There are also prices quoted for Italian drones "To July 30, 2 fr. per hundred; August 1 to October 30, 3 fr. per hundred." What was the price on July 31?

The point of chief interest is that this first importation came, not from Italy but from Switzerland. Richard Colvin, who was one of the first to import Italian queens (in 1858-9, with Langstroth,) says in an article in the report of the Commissioner of Agriculture for 1863: "Parsons *** received an importation of them from the northern part of Italy * * *." Colvin also received Italian queens from Dzierzon in June, 1860, his earlier imported queens having all died. From this it may be concluded that it was commonly believed that the Parsons importation was from Italy. However, Mr. Parsons reported to the Agricultural Division of the Patent Office on January 3, 1860, the purchase of ten colonies from Herman of Tamins. Herr Herman lived in Tamins, Canton of Graubunden, in eastern Switzerland, which is located at the junction of the Vorder Rhein and the Hinter Rhein. The Rhine River then flows northeast and north to Lake Constance. Chur, where the book was published, is just below Tamins in the valley of the Rhine. From Tamins to the nearest point in Lombardy, Italy, is less than 25 miles in a direct line; but the Rhaetian Alps intervene, over which bees would have difficulty in passing. It is only about 20 miles down the river to Lichtenstein, Austria; but unless bees flew over the water they would encounter some high mountains in flying toward Austrian territory.

The book itself is curious, and full of good and bad beekeeping. It is evidently intended to induce beekeepers to buy queens of the author, an indirect method of advertising of which American bee-literature is not free. The author thinks that his bees are the true race while those of Italy are not. The Alps are, he thinks, the place of origin of this race, for "it is probable that when the great flood came, certainly all the animals of the lowlands were the first to drown, and those in the mountains remained over for the afterworld." So Noah did not have a pair of Italian bees on board! He says the cell of the Italian bee is 30 per cent greater in capacity than that of the blacks. Directions are given for increasing the number of Italian colonies, not only by the use of queen-cells, but, especially when skeps are used, he recommends placing a weak Italian colony on the stand of a black colony during a heavy honey-flow. "The black bees are somewhat disturbed at first, and do not want to enter, for the two kinds of bees hate each other."

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* The book was translated in 1860 into English and published by Geo. Neighbour & Sons, London, and also into French. In the same year there appeared a book in Italian with a similar title, perhaps the same book.

He objects to Spinola's name *Apis ligustica* for the Italian bee and says: "Is there any reason why we should not be able to have a second baptism when we have become convinced that our investigations are more conformable to nature? Therefore henceforth this shall be the yellow Alpine bee, or in Latin *Apis Helvetia* or *Helvetica* (we do not understand Latin well)." Having found the origin of this bee in the Swiss Alps he says: "One must not grasp the proof of a statement by the hair, however. A nationality is to be sought, not on the borders but in the center of a country." Probably our author looks on Switzerland and Italy as natural divisions of the earth's surface, not artificial divisions for man's convenience. "Only thru the rearing of this kind of bees may one be an apiculturist in the full sense of the word."

There are plenty of amusing statements which could be quoted. For example, the queen is said to develop in 10-17 days, workers in 18-21 days, and drones in 21-24 days. Workers are rendered sexless by the action of the other workers, not thru differences in food but by mutilation. Workers probably mate with drones. "The odor from an Italian bee colony is penetrating and readily distinguishable from a German hive." For queen-rearing, "choose the most beautiful colony; for it is like the old proverb, 'A large cow has a large calf.'"

But the author's ideas about bee-breeding are not of special interest now. The point which does interest us is that his extravagant statements of the merits of "*Apis helvetia* or *helvetica*," and the fact that the Patent Office Library contained this particular copy of the book, probably resulted in the purchase of the colonies of "Italian bees" which came to the United States to begin the long line of Italians which are so much preferred by practical beekeepers today.

GIRLS AS HONEY SELLERS

An Interesting and Practical Plan for Disposing of a Large Amount of Honey in Home Markets

By E. C. Walker

LAST season was one of the best ever known in southern Indiana. The honey too (white clover) was of unusually fine quality. Our home apiary is located at the edge of the city in an apple-orchard adjoining our home in full view from the Charleston Road, a highway much traveled by automobiles. The yard is kept in perfect order, and the hives are always well painted. On one of the apple-trees hangs a sign—"Honey for Sale." Locating the apiary where it may be seen daily by hundreds of travelers is a good advertisement. We have callers daily who buy honey in quantities of one pound up to five gallons.

While a considerable amount of honey has been sold in this way, a quicker outlet must be found if one has a large crop. In the past, most of our honey has been sold wholesale to large fancy grocers; but they buy in large quantities and pay correspondingly low prices, selling to their rich patrons at fancy prices. Now, I am selfish enough to want to make at least the same percentage of profit as the dealer, and altruistic enough to want to see honey become a staple article of food instead of a luxury. At the present price of sugar, honey should find a more ready sale than ever before.

Being anxious to realize the best possible price for our honey crop, and also desiring to develop a local retail trade, I decided that a house-to-house selling campaign must be inaugurated. Personally I don't want to peddle honey from door to door. Good solicitors are very hard to find, and I would rather have no representative than a poor one. After a little deliberation it occurred to me that my little ten-year-old daughter might sell honey. As compensation she was offered a commission of 20 per cent on all sales. She and her little playmate of eleven years of age started out enthusiastically one hot August afternoon; and as I saw the little tots leaving with all the honey they could carry I began to pity them, for I feared that disappointment was in store for them. However, upon returning they were all smiles, and reported the sale of six jars of honey at twenty-five cents each. I told them they had done splendidly, but tried to dissuade them from the work, as I feared it would be too hard for them.

The next morning, bright and early, they were again ready; but they decided not to go together, as they didn't want to divide their profits as they had the day before. Before noon they were back again to have their baskets refilled. They have been at it every day; and two other little girls having heard of their success have likewise gone into the peddling of honey.

A number of other children have asked for the privilege of selling honey; but the four children already at it said they could cover the town, and threatened to strike if we allowed any more to peddle. New Albany has a population of thirty thousand, and each of the four children is assigned a certain section of the city in which to work. Each of them has sold daily from four to fifteen dollars' worth of honey. The sales have steadily increased. The girls began with six-ounce jelly-glasses and one-pound jars; but they are now going back over the same routes and securing repeat orders, many of which are for half-gallon and gallon buckets.

These children were given no instructions whatever on how to approach a customer nor on the line of talk to hand out, but were simply told the prices at which to sell the various packages. In their own childish way they have made their appeal, and to this very thing I attribute their success. The most timid child of the four has proven the best salesgirl of the lot, her daily sales being about double those of any of the others.

One object I had in letting my own little ten-year-old daughter sell honey was to teach her the value of money and impress her with the fact that one has to work hard to earn money. In this I was defeated, for the children think selling honey is fun; and when in the evening they return with their little purses bulged with money, and I count out their 20 per cent (which, with the eleven-year-old child, has amounted to from $1.00 to $3.00 per day), I fear they will have a false impression of their earning capacity. The work is hard, of course; but enthusiasm makes any task light.

The honey is white clover, of the finest quality, and is put up in attractive clear-glass jars, and neatly labeled. This, of course, helps in the selling. Then, too, as stated above, the Walker & Marzian home apiary is located so that it is in full view from the highway, and hence nearly every one in New Albany knows that we keep bees, and this gives them confidence. The appeal of a sweet-faced little girl with a basket on her arm, holding up a sparkling jar of nature's sweet, or a virgin white comb, is simply irresistible. I do not think a boy or a man or a woman could do as well as have these little girls.

The prices secured are as follows: Comb honey, 20 cts. per section; extracted honey, six-ounce jelly-glasses, 10 cts.; eight-ounce jars, 15 cts.; nineteen-ounce jars, 25 cts.; six-pound friction-top buckets, $1.00;

twelve-pound friction-top buckets, $2.00; chunk honey in square clear-glass quart fruit-jars, 75 cts. We sell to the local grocers also, and these prices are the same as the grocers secure. One might think that peddling honey from door to door would interfere with the grocers' sales; but, on the contrary, it has stimulated their trade if anything.

I believe beekeepers who are located in or near a town make a mistake if they do not dispose of as much of their crop as possible in their home market; and, further, that the more honey we sell direct to the consumer the better, for in this way people who have never thought of honey as a food will become regular consumers, and will see that they get it, particularly if there are any children in the house. But when retailing honey, always be sure to get the retail price.

New Albany, Ind.

WHAT'S THE REASON?

Why Cannot the Associations in this Country Accomplish as Much as those in Switzerland?

By F. Greiner

THE following extract from an extensive report of the work done by the "Organization of the Swiss Beekeepers" will, no doubt, be of interest to the readers of Gleanings, as they will find suggestions therein helpful in many ways. It seems to me that this organization is doing a work right along that benefits its members in a very material way. Many times after returning from one of our beekeepers' meetings I have asked myself what we have accomplished. We usually have a very good time, meet one another, discuss the management of bees for profit, and sometimes learn a little along this line, which is all very good so far as it goes; but we do not receive such benefits as it would seem we might. What's the reason?

The Organization of the Swiss Beekeepers consists of 117 local societies. On account of the great war a convention has not been held in two years.

The unfavorable season of 1916 made it necessary to do a great deal of feeding. The sugar needed for this purpose was obtained thru the organization at a very low rate, the Swiss government allowing the same to come in duty-free, if my understanding is correct.

The official organ of the association, *Die Schweizerische Bienenzeitung*, has 8124 subscribers.

Twenty-four beekeepers' institutes were held during 1916. Forty observation stations and seventy-four mating-stations are constantly maintained. Eleven hundred apiaries with ten thousand colonies of bees were visited by official committees.

CO-OPERATIVE SELLING.

The organization is instrumental in disposing of the honey of the members. During 1916 the honey produced by 67 local societies was thus taken care of. Nine hundred beekeepers with 21,122 colonies of bees, producing 108,151 kilos of honey (238,429 pounds) placed their product in the hands of the association and had it sold.

The book-keeping branch of this body of beekeepers has one hundred members. According to their reports, taking a four-year average, the capital invested per colony is $8.28; running expenses, $2.12; depreciation, 32 cts.; net receipts, 70 cts.

A library is owned by the society, consisting of 760 different works on bee culture and 112 works of other or kindred characters. There are 1300 volumes in all, some of the books in duplicate. Four hundred and twenty-seven beekeepers availed themselves of the opportunity to read the books.

A museum is also maintained where, I presume, everything noteworthy in the line of beekeepers' implements, etc., may be seen, the same being visited by a great many people, and serving, no doubt, as a medium of education materially.

To facilitate the purchase and the sale of bees, particularly of young colonies, an agency is permanently conducted in Sursee.

There is also an accident and a foulbrood insurance bureau. During 1915 49 cases of foul brood were adjusted and paid for, damages amounting to $302.29; 122,596 colonies were insured, paying in premiums $1191.68, the surplus in this department being $2144.34, the general cash surplus of the organization being $9158.19.

From the above brief account we can see that the Swiss beekeepers are far ahead of American beekeepers as to organization. They have attained what we hardly dream of. The members of the association seem to place their honey in the hands of the central

Continued on page 153.

GLEANINGS IN BEE CULTURE

FROM THE FIELD OF EXPERIENCE

Conversations with Beekeepers

Do bees ever collide on the wing? Are they affected by objects in motion? Does a black hat really rouse the ire of bees? These may be unimportant to old beekeepers, but they are very interesting to the man just commencing.

As beekeeping is quite largely made up of little things, a better understanding of these may lead to our comfort in handling bees, and also so interest us that we may make a greater success in our undertaking.

COLLISION AMONG BEES.

Regarding the collision of bees when on the wing: This is something which I do not remember any one asking about before. Years ago, when this part of New York State was quite largely timbered, there was a place cleared off between two of the large tracts of woodland, about twenty rods wide and 30 to 40 rods from my apiary. This seemed to form a grand highway for the bees as they hurried to and from the apiary to the basswood bloom on the hillside a mile or two away. Many a time have I lain stretched at full length on my back directly under this highway of teeming thousands with my eyes partially shaded by my hands observing that the air was apparently full of dark lines showing their course of transit. While I never saw a head-on collision I quite frequently observed two lines apparently meet and then slightly diverge in a somewhat altered direction. This was probably a wing collision. These little jolts were apparently more numerous in case of bees which were coming in heavily loaded. At times of strong winds I would find quite a number of bees crawling, apparently disabled, on the ground with no apparent organic ailment. My thought was that these bees had been disabled by collisions. If this thought was right, why are there no collisions when bees are swarming? The air is full of circling dark lines, and I have noticed crippled bees crawling on the ground under swarms which had just alighted on some low-down limb. In case of a swarm, nearly if not all of the bees are loaded, and they fly with their abdomens hanging down more than usual, so that the chances for a head-on collision are not so great as with the rush of unloaded bees for the fields.

RAPID MOTION IRRITATES BEES.

Regarding bees being affected by objects in motion: A man will not need to run more than two or three times backward and forward thru the apiary before he will be doing some hiding. Nothing except the jarring of their home irritates bees more than rapid motions about the hives, and especially in front of the entrance. Especially is this true where the apiarist visits the out-apiary only two or three times during the season. On a return after a two-months' absence every move is watched. If I approach a little too close to the hives it will be resented and the bees will attack my feet and ankles; and, eventually, my head. After an hour or two of work this pettishness on their part is not so noticeable.

I read somewhere that if a flag were placed in the apiary it would have a tendency to accustom the bees to motion. Having a strawberry-bed that came to the edge of the bee-yard I put up some differently colored pieces of cloth to keep the robins away. While this did not seem to have any effect on the robins, yet I soon became aware that I was not bothered so much by the nettlesomeness of the bees at this end of the apiary.

Interviews from many "inquiring" bees are not altogether pleasant. Why is it that a few bees will take upon themselves the duty of following you about the apiary? If you do not fight them there will be hardly more than from three to five. Even if you retire two or three rods away, three or four bees will pester you. If you have a paddle and knock them down and there is no scent from poison, it will not take five minutes for their places to be filled by another three to five bees when there might as well be as many thousand. It is a mystery, is it not?

THE EFFECT OF DIFFERENT COLORS?

As to the ire of bees being roused by different colors: This is something which has been much discussed during the past, the majority believing that a dark color is offensive to the bees. I well remember going with three other beekeepers to visit an apiary, the others wearing light-colored hats while mine was black. It was soon noticeable that I was the target for all cross bees. The color theory came up and I changed for the whitest of the other three hats. This change seemed to make no difference. The bees selected me as the one to vent their spite upon, while the wearer of the black hat was as immune as before. These hats were all of the kind which are

FROM THE FIELD OF EXPERIENCE

generally called straw. If it is the black color which is obnoxious to bees, it should be remembered that we all wear a black veil, or, at least, a veil with a black face, and the black portion is not molested any more than the other portions. But if the veil gets torn, and we pucker the rent with a pin, and make a fuzzy protuberance, the bees will attack that point persistently. It is the same with a fuzzy hat, white or black, and a hole in a fuzzy hat is just what a bee delights in and dives into. A good share of our dark clothing has a more or less fuzzy surface; and the more the fuzz, the more the bee clings to it; and when two or three bees discharge their poison on the same spot, the odor brings many more.

Borodino, N. Y. G. M. Doolittle.

* * *

Letters from a Beekeeper's Wife

At Convention, February 1, 1917.

Dear Sis:

I know you are anxious to know how we are enjoying the convention, so while I am right here in the midst of it I'll take time to give you my impression. Rob is having the time of his life.

To begin with the first session—the only impression I had was of heavy solemnity. The beekeepers who came into the dark, stuffy room in the Capitol assigned to us were heavy-bearded, heavy-footed, solemn and important! I was almost frightened! They all wear terrible red badges with a queen bee on! There were two other wives who sat with their husbands, as I did—I mean each sat with her husband—and we all listened very respectfully and attentively to the President's address and reports of committees. I looked around during the reading and discovered that, altho there were a great many elderly bearded men present, there was more than a sprinkling of young, clear-skinned, wide-awake-looking men too. And some of the older men looked younger after I had heard them talk—especially good old Mr. Randolph.

I expected a great deal from the papers that were to be read—but, oh dear, such a disappointment! They were nothing more than the endless discussions I hear at home between beekeepers. The same old subjects—Queen-rearing, Bee Diseases, Marketing Honey (about which most of the men seem to know almost nothing) and the men who talked didn't know any more about their subjects than the other men apparently, but, just like all beekeepers, when a paper was ended there was wordy, wandering discussion of it. As every man had to air his pet theory—every beekeeper *has* a pet theory—the discussion wandered off in all directions and never seemed to arrive. They talk about the aimless discussion in women's clubs, but it can't compare with a state beekeepers' convention.

At the end of the day I wondered to myself what Rob can get out of this organization to want to come year after year.

Rob read a paper on "Home Marketing of Honey" in which he described our work last summer. One man actually said that it was not right to charge twenty cents a pound for honey, and several intimated that Rob had not really done what he said! That made me furious, and I was glad that a young beekeeper rose and completely annihilated Rob's critics, finishing by telling them that a man who will retail honey for ten cents a pound is little short of a fool. Rob's paper was the best one read yesterday—of course I am unbiased in my judgment!

However, today the apiarist from the State College talked, and, as every one had worked his pet theory out of his system the day before, the discussion stayed somewhat nearer the topic. I noticed that the younger men almost always led in progressive ideas, but I must again include Mr. Randolph, who is almost eighty years young, and the conservative old heads would shake in disapproval. I suppose it was the same in Langstroth's day when he tried to introduce the movable-frame hive—and you know Susan B. Anthony had troubles of her own.

I've been over to the last session but slipped out to write to you. They were carrying on a question-box when I left. That's the funniest thing! Any one who desires writes out a question he would like to have answered. These are read aloud and then any one at all answers, whether he is an authority on the subject or merely thinks he is. I have an idea that some of them put in questions that they expect to answer themselves, for a lot of the men have not had much chance to talk today while there were real subjects being discussed. There will be five or six absolutely different answers to each question, so that I should suppose that an amateur would be pretty well muddled in the end.

Of course now that I've been with these beekeepers for two days I begin to see why they like to come to conventions, but I don't believe that most of them know the real reason. It isn't for the papers, and certainly not for the awful question-box, but for the human contact with beekeepers—and they are a mighty nice lot of people. After the sessions it's the hardest thing to pry Rob loose from any little group that happens to form, and last night he stayed up and talked to the apiarist from the college until half past one. Poor Mr. Apiarist! I'm not pitying Rob for I'm sure it was his fault. The beemen hang around that dingy room or the hotel lobby, swapping bee stories until the lights are turned out. Rob says the convention has been a success this year, for the usual bore with a new hive did not come, and the man who has kept bees a few months but knows more about beekeeping than all the rest put together has been kept in the background. Rob is quite elated that they didn't make a new constitution this year, for he says that is the beekeeper's favorite indoor sport.

I'm glad I came for I have met lots of men that I've known by name for a long time. Tonight we leave for home. Goodby.

Mary.

* * *

Trouble, Trouble, Toil and Trouble

As I was busy today nailing up three hundred metal-spaced frames, the thought came to me that if the manufacturers understood only to a small degree the difficulties to the beginner of properly nailing together the hive and its various parts when they are shipped in the flat they would take some measures to advise us as to the best and easiest ways of doing it.

The coming season will be my fourth with the bees; and I might say that, until my original two hives of bees arrived at my nearest station, I had seen the interior of a hive only once, and had never handled or seen bees kept for honey with the above exception. How well do I yet remember going to the station to bring home my first two colonies! There were my bees out on the platform with quite a number flying around the hives, and appearing to come from a hole in the wire netting of one of them. The express agent informed me that they were inside at first; but, owing to the bees getting out too freely for his comfort, he had placed them where I found them. What to do was the problem I had to solve, as naturally I did not relish being stung at the outset of my beekeeping career. A happy thought struck me; and, hastening to a nearby department store, I procured two yards of cheese-cloth, and, armed with gloves, veil, and smoker (which I had fortunately brought along) proceeded to place the cloth entirely over and around the leaking hive and tied it securely in place. After that it was comparatively easy sailing, altho there were a few bees flying around; but doubtless they were more frightened than I was, but I did not know it then.

More difficulties were in front of me. I had ordered two extra two-story hives in the flat; and when I unpacked the box and endeavored to put the various parts of hive, cover, bottom-board, and frames together I found I was up against a veritable Chinese puzzle. After considerable sorting the various parts for hive body, covers, bottoms, frames, etc., were assembled, altho even then and for a year or two afterward there were a few pieces I could not identify, and it was a long time afterward before I discovered they were intended to support the galvanized iron roof. Then there were long thick nails and short thick nails and small thin nails. Where was I to use the different sizes of nails? how many nails should be used for the different parts? Then there were holes in the side bars of the frames; but what was the proper way to do the wiring? and how were the wires to be made tight? Remember I had nothing to guide me but the A B C of Bee Culture and one of the bee journals. The trouble with any of the helps of this nature that I had was that none of them were elementary enough to help such a greenhorn as I. In spite of my handicaps I finally completed the task in a fairly creditable manner, but I have since seen where I could have done a better and quicker job.

My difficulties were pretty well over, I hoped, along these lines, until I commenced getting my supplies ready for the coming season's work. I have just unpacked a shipment, and included in my order were some chaff division-boards, which I had never used before, but had ordered this year to protect some pound packages of bees I had coming. Among the packages was a roll of what I took to be first-aid cotton bandages; and it was some time before it occurred to me that they were a part of the division-boards, and longer yet before what I think is the right way of attaching them came to me; and then it was thru remembering something I had read some time back in one of the journals. How a sheer beginner would ever begin to put

FROM THE FIELD OF EXPERIENCE

one of those chaff division-boards together and attach and stuff the cushion properly I cannot imagine.

It did not matter much if one were a little slow in putting together frames and sections and other parts when there were only a few colonies to attend to; but as the number increases the task does too, and there must surely be some more expeditious way of knocking frames, hives, etc., together than I have yet found out. I have an excuse for a jig for nailing frames, but it can be very much improved; and I have a board for wiring, the idea being taken from a book I have read, but I still feel I am a long way from having the best methods. The beekeepers I have met have not been able to help me much, so apparently I am not the only one seeking for better methods of nailing up hives and their parts. Beginners cannot afford to buy the jigs and other appliances which are listed by a few of the manufacturers, and for their sakes some instruction along these lines should be available.

Norman, Ont. E. L. CARTER.

[Most manufacturers send directions with their supplies. Your copy might have become lost in transit. A very good way for a beginner to do is to order one hive nailed up in order to make everything plain.—ED.]

* * *

Sumthin wot i no

Mistur editur
deer sur

i sea bi ther papar (p. 1106 desembur wunst) wot yu got in yure glenins ez howt ther glucuss trust iz bust. doant yu ges its gude fer um en ther bekepers, cuz doant yu no ez howt it workt fur ther standurt ile. i red ez howt it made millyuns uv dollurs fur um on ther stok, en ennyhow i no i yuster fead mi ole orto on nyne sent gasurlene en neow she wunt mufful atal les i giv hur nyntene sent gasurlene en its pleggy pore stuf tu, doant yu kinder rekun ther prise uv glucuss ul riz sum en if it deuse doant yu kinder ges mor pepul ul by hunny en not yuse ther glucuss trach. ther glucuss thay bin givin us hes ben mity pore stuf en wot ul it be neow thayer bustid. semes i notis ez howt ther fellers wot maikes up er trust en doant git er hi prise ernuf fer thayer stuf wurks sose tu hev ther guvermunt bust thayer gaim en then by hek thay soke ther pepul al ther mor en maike mor munny en thay did in ther fust plaise. next yu no if lekshuns doant chainge ther wisky foks ul wantter be bustid sote thay kin rase ther prise en maike mor munny. yu no es howt ther guvermunt iz in cumperny withe ther wisky croud sote thay bin gittin moast enythin thay wantid en if thay suckseed ma hevin help ther pore fules ez ges thay gotter hev it. i notis ez howt mistur chadwick (paige 1112 nere ther top) iz sorter jelus cuz mistur crane hez got a orto. i thoart ez howt mistur chadwick wuz er bekeper en if he hante he must be wun uv them lowe dowen no kounte box gum fellers wot hante got morn gest er fu gums en doant kneade no orto. i ges hese ben liftin um cuz he sez ez howt thays hevy sote i ges hese got gude sents tu no bease gotter hev sumthin tu ete ur thay doant du wel. i doant bleve dolittuls myles iz haf ez long in yorke staite ez thay iz in mishigun en i spose tis lokalurty wot dun it. i notis grase allin (paige 1110 secund colyum bout haf wa dowen) iz bevin trubbul cuz wurms git inter hur comes. i rase some extrakt uv hunny en ile tel hur ez howt i yuster fix mi comes en howt i du it now. i yuster pile up ate, nyne en ten fraims in er hife en stan um outter dores en wen i tuk ther hifes dowen it yuster mak me sik cuz ther wurms hed dun damidge. neow fur 3 yeres ive pild ur hed um pild up nise en lite with onnly sevun fraims inter er ten fraim hife en sote bi no posurbul chanct no tu comes cud cum terguther en i doant get no mor wurms atal. i doant yuse nothin atal but gude relierbul help wot deuse its tolt ur i du it misulph. i doant no heow menny hifes i hed last yere ennyhow twus morn er thowsund en didunt git but wun hife with wurms en thet wus cawsed by er fule mous wot prubberbly got in before hife wus pild. praps its sum mor lokalurty. i notis wen er feller iz gittin ther wust uv a argermunt he jest sez ther uther feller lives in er diffurent lokalurty sote i spose it kinder lets hissulph dowen ezeer en he doant hafter sa ther uther feller iz rite. tel thet Massey feller onter paige 1127 hese treddin on dangerrus grownde. fust he nose breaddurs en them wot cels um et ten dollurs itch ul be advurtisin queanes ez ul go twenty myles fer hunny en i doant kere tu hev no sich naburs bease prowlin erround onto mi terrortorey. jist go kinder kereful mistur massey them ere breaddurs doant kneade no nu pints jist yit. doant yu sea neow es howt sum uv um hev got stranes ez ul kik fowl (not chalon) brude outtur ther bak dore fastturner it kin cum in ther frunt. byer gosh i like tu rede wot them ere kurnuks rite thay no sumthin. wen yu go tu cannurdy ergin halterman er tu en sea fu cawnt git sum mor tu rite gude stuf. i ges i cude rite mor but it ortter du fer wonset Yures trewly

Hen E. Rich
mush rat holler
mishigun

* * *

When Bees Want to Swarm they Swarm

About forty years ago we boys rescued a cluster of bees left in a bee-tree after the honey had been taken out. We sawed off about five feet of the trunk, wrapped a sheet around the whole thing, and carried it home. There we set the trunk on end, placed a board on top, and fastened a wide board across the opening that had been split off with the exception of a large hole near the bottom about 8 by 12 inches. We left this so we could put a dish in to feed the bees.

The colony built up rapidly; and before getting the cavity in the trunk half full of honey it sent out three swarms. The bees did not have to crawl in and out thru an entrance—they just flew in and out thru that large hole. Talk about bees swarming less if they have room and ventilation! These bees had both.

I can make more money buying bees and wearing them out than I can by raising them. I buy bees every year and I find they swarm the most the first year; but I get more honey out of them the second year. When bees are kept busy they will not swarm very much. I never allow my bees to hang outside of the hive.

WIDE VERSUS NARROW SPACING.

I bought 60 colonies of bees a few years ago in hives that had no frames, the combs being built on bars only, these bars being spaced 1¾ inches from center to center. These were the largest bees I ever saw, and they brought in the honey too. There were very small entrances to the hive, so I put each block underneath to give more ventilation. Did they swarm? I guess so, but only the first summer.

Bees *will* raise some drones; and when the frames are crowded too close together the drones are likely to be dwarfed. In breeding domestic animals we take great pains to develop the sire.

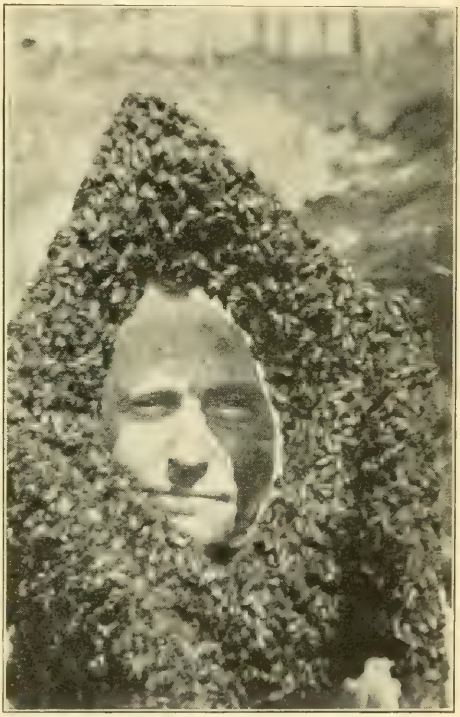
Some bees do not require more than 1⅜-inch spacing. Why is it that most of the improved bees are broad and short? Is it because the frames were spaced too close? The bees that gather honey are long-bodied. Why not breed for long slender bees?

I have bought a few queens every year for the last ten years, and have tried queens from two different experiment stations, but can find none to equal my own stock obtained by buying bees and sifting out the best.

Ridgeland, Wis. W. E. Krause.

* * *

New Style Picture Frame



This is not the picture of an Eskimo wearing a Persian-lamb hood in Arctic regions in winter time. It is just Mr. P. W. Stowell, of Otsego, Mich., in hot July, sticking his face into a hole in the screen of a swarm-catcher when loaded down with bees, and then having his neighbor " snap " him in that unique position. Picture-frames of this design are not on sale generally; and, even if they were, it is not likely that they would be popular with the great American public. Just the same, a swarm-catcher with a hole in the screen and a good-looking beekeeper's face in the hole makes a novel picture.

CAN THIS BE DONE?

First Steps Taken in the Big Queen-Rearing Experiment Under Cover *Chapter II.*

By the Editors

ONCE more — "Can this be done?" Can queens be successfully reared under cover and the mating controlled? Our answer to this question is the progressive story of the experiment now being tried in the largest greenhouse in America, introductory reference to which was made in the January GLEANINGS.

This second chapter in the story of the experiment might properly be entitled "What the Drones Didn't Do and What the Queen Quit Doing."

High up in the greenhouse, and—

It was on Nov. 20 last that a fairly strong colony of bees, including about 200 drones, was installed in the giant glass building. This colony was decidedly exceptional in that it had any living drones whatever as late as Nov. 20, and in the further fact that it had an abnormal number of drones thruout the season of 1916. As late as Nov. 1 the combs within the hive contained many drones. The farmer from whom the colony was secured had called the attention of Mr. Mel T. Pritchard, the A. I. Root Co.'s expert queen-breeder, to the prodigiousness of drones in this particular hive. It then occurred to Mr. Pritchard that such a drone-encumbered colony, with its drone-producing queen, was just the one to try first in the experiment of under-cover queen-rearing and mating.

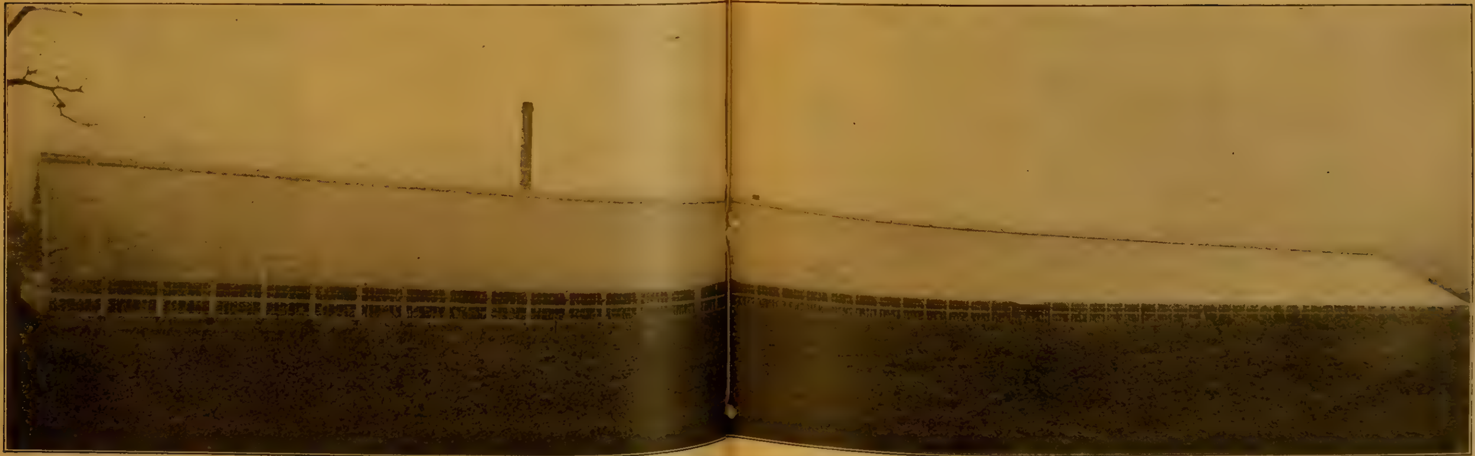
The hive when shipped was provided with two frames of drone comb, one frame of worker comb (with a patch of brood as large as a man's hand) and five frames of stores, including some pollen. The comb of brood was hung between the two drone-combs, with the expectation that the queen would have to get on to them to lay—if she were to lay at all. This hive arrived at its destination 24 hours after being shipped, and there were only a few dead bees to be found on arrival. The drones were apparently in good condition at Medina when shipped to the big greenhouse, altho, of course, they may have been old and almost about to die at the time.

At first the hive was placed for a day or two at the extreme west end of the structure, elevated only a little above the ground. At that time the greenhouse was filled with matured tomato-vines, many ripe and ripening tomatoes being on the vines. (The tomato-blossom has no attraction for bees.) It was opened by the greenhouse company's apiarian only to the extent of lifting the cover and removing the screen. He made no investigation of hive conditions at that time. Ten days later, after the hive had been elevated to the platform in the center of the building, the first observation of conditions within the experimental hive was made. Eggs and unsealed worker brood were found in the combs, but the queen had laid in the worker-cells only. There was no drone brood at that time. A week later there were no drone eggs nor drone brood to be found, and the worker brood was sealed.

The greenhouse apiarian, a competent and observant beeman, gave his testimony that he had never seen a drone nor drone egg within the big steel-and-glass structure. What had become of the drones in the hive shipped under Mr. Pritchard's directions, he could not say. They had completely disappeared without his having seen one of them, altho he had watched for a drone—dead or alive—all thru the big greenhouse since the arrival of the experimental hive. A few of the bees of this hive had flown almost every day.

On Jan. 6, one of the editors of GLEANINGS and Mr. Pritchard made a journey to the scene of experiment to investigate conditions. The experimental hive was opened on its elevated platform by Mr. Pritchard, and the greenhouse apiarian (the two being shown at this work in the pictures at either side of this page). This examination was

Looking them over very carefully.

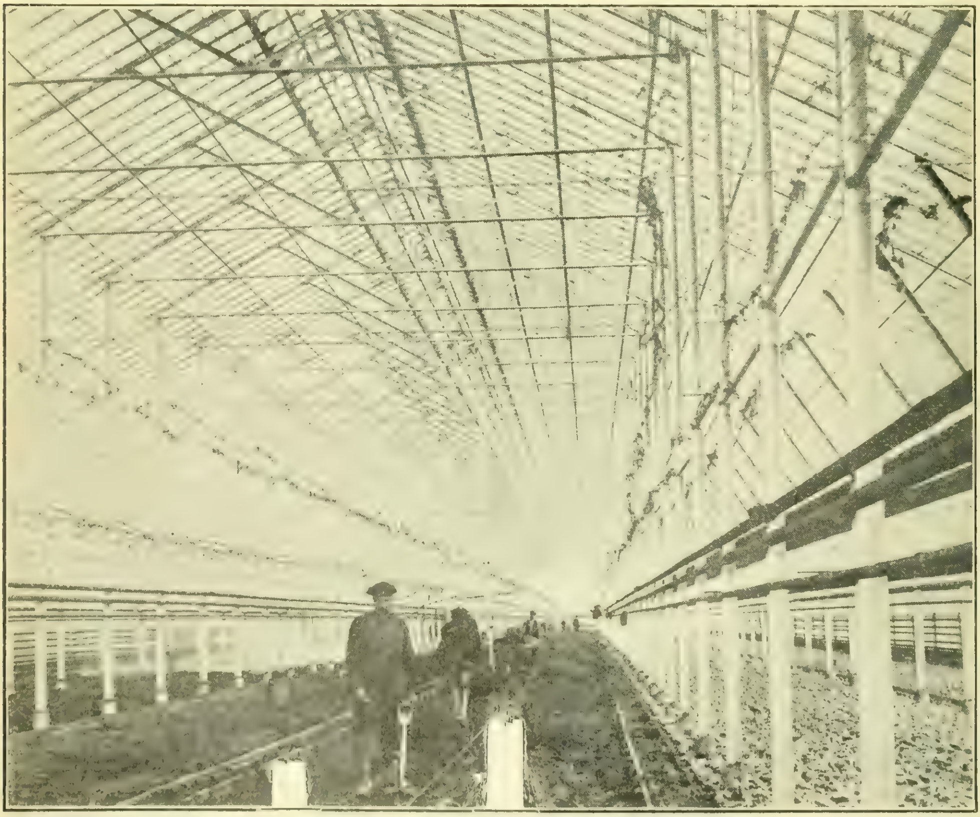


very carefully made. No sign of drones could be found. The queen was discovered, after long search, reduced in size and evidently not laying. She looked old, and it was suggested that it might be because of old age that she had produced so many drones during the season just past. The pollen had been entirely consumed, which fact would account for the queen's not laying, and for the discontinuance of brood-rearing. Some rye flour that had been placed in a shallow box near the bees had not been touched. The bees, however, were storing syrup (one part sugar, two parts water), fed to them in a Boardman entrance feeder. In order to make the bees store the flour, Mr. Pritchard secured a salt-shaker, filled it with flour, and thoroly sprinkled it over the bees and frames, directing the greenhouse man to examine the hive within a day or two to see if they had cleaned up and stored the flour in lieu of pollen.

Now that the drones had completely disappeared and the queen had quit laying, it became necessary to get the queen to lay again, if possible, and so the flour was resorted to as a stimulant. Within a few days the bees had cleaned up the flour and the queen had begun laying. On Jan. 17 there was a patch of worker-brood as large as a silver dollar.

At present the building is filled with lettuce. This does not require so high a temperature as the cucumbers, which go in later—50 to 60 degrees in the day-time and 45 at night. When the sun shines, however, the temperature often reaches 70 or 75. The lettuce will occupy the space until about the first of March when the cucumbers, now being grown from the seed in other buildings, will take its place. The cucumber vines, trained on wires, reach a height of seven or eight feet; and this, together with the fact that every bit of the space below is needed, caused us to locate the bees on the platform some twelve feet high. above the braces and pipes.

What shall we say of the results to date? The old drones did not fly, return to the hive and live, as we had hoped. But, as they say in the story magazines, "Continued in our next."



Interior of the great greenhouse building, showing length view, workmen preparing the earth beds for lettuce, and lettuce plants set in the beds to the right, Jan. 6.

STRAY STRAWS

Dr. C. C. Miller

MANY of us went over to the 1⅜ spacing, some of us because it was thought better, and some of us, like myself, because it was the fashion. But if we should look the matter up we might find that a good many have quietly gone along using the 1½ spacing without saying anything about it. I didn't know till lately that the Dadants spaced 1½, but I think Doolittle has always done so, and no doubt " there are others."

Sorry to see the announcement that I was to be one of the speakers at the Madison convention. I'd like ever so much to be there, but have never had any expectation of it.

Drifting used to be a pretty bad thing here when we took bees out of the cellar. we still take them out on a bright day, when they can fly as soon as roused up; but there has been no drifting for years. The only thing I know to account for it is that now we close the entrance to an inch just as soon as the hive is on its stand and the dead bees cleaned out.

" New Zealand cannot consume all of the honey produced," p. 1060. In a way, that is true; and I suppose the same might be said of Colorado and some other states. Getting down to bed-rock, however, I doubt very much whether it's strictly true of any spot on earth as large as New Zealand. If a strict embargo were placed upon exporting a pound of honey, and the people were obliged to consume all produced, I believe they would be the gainers by it in health and strength. Same with Colorado. Might not be the best thing for the beekeepers, and, again, it might.

Rearing queen-cells on a comb lying flat as described on p. 1160, Dec. 15, was considerably exploited a few years ago. I think the plan was " made in Germany," but was never much used in this country. Last summer I tried it with a little variation. I used a super so shallow that there was barely room for cells to be built down without touching the top-bars, and about ½-inch space above the comb. The comb had eggs and brood in all stages—there was no other brood in the hive, merely combs with honey—and I didn't take the trouble to destroy any of the cells. Two little sticks helped to support the comb so it would not sag. The bees took care of both sides, but started cells only on the lower side. One nice thing is that the cells hang down straight, and can be cut out so as to leave a very small hole, the cell not having attached to it the usual amount of waste comb.

T. T. Taylor, you are inclined to think, p. 1172, " it would be much better for the present and future of beekeeping, in some countries at least, if beekeepers were to co-operate in improving that variety of bee which is found to be the dominant one of their respective countries." That phrase " in some countries " should have its full emphasis. Your belief is all right for Switzerland, and perhaps for England, for I think the majority of you Britishers believe blacks better than Italians, and I believe blacks are the dominant race with you. You are quite right in saying " this question pertains more to other countries than to the United States." It doesn't pertain to this country at all, keeping in mind that it is a question of concentrating on the dominant race. It is pretty clearly established that wherever blacks and Italians are left on an equal footing the blacks will run out the Italians, so the blacks are the dominant race. It is equally well established that Italians are for us the better race. Time was when some of our leading beekeepers maintained that blacks were better, and stubbornly held on to them. But one by one they recanted, and at present it would be hard to find an American beekeeper who doesn't try to exclude black blood as rigidly as he can.

So it's idle to talk to American beekeepers about concentrating upon the dominant race, either for the present or future of beekeeping. Would it be better to concentrate upon Italians? May be. It would if we were sure they were the best race. Possibly it may come to that. Very likely it will if ever the time comes when *all* agree that the Italian is the best. But at present some think they get better results from some variety other than Italians; and so long as they have that belief one cannot blame them for holding on to their favorites. This is a pretty big country, and possibly it may turn out that one bee may be best for a certain region and another for a certain other region.

Certainly there would be advantages if we could have just one kind of bee for the whole country, but—

IN CALIFORNIA

P. C. Chadwick

RAIN conditions are satisfactory at this date, Jan. 7.

* * *

The state convention is said to have been postponed until some time in February.

* * *

Mr. W. H. Crawford, of Roswell, N. M., has moved to our state and has taken over a location near Santa Ana.

* * *

Did you ever notice that the man who knows *all* about bees is generally trying to find out what his neighbors know?

* * *

Bees, like men, work better under excitement. When there is big work at hand they are in a frenzy to secure their share of the spoils.

* * *

Well-ripened honey cannot be secured with a single super in a heavy flow without shortening the harvest or giving the colony too much of an inducement to swarm.

* * *

I am for a federal quarantine law, with government inspection. It is the only way that a man may be safe in the movement of bees without keeping a library of local and state laws.

* * *

Useless equipment and valueless appliances should be avoided; patent entrance-guards, lid-fasteners, etc., are, as a rule, in the way and occupy valuable time in their care and manipulation.

* * *

The market is cleaned up, with prices high and strong. Now is the time to give your bees every possible help. It may be a chance to meet the high cost of living and smile in its face.

* * *

Mr. G. W. Dixon, of Beaumont, is fast becoming known as the honey-man of Redlands. He is making a great success of peddling honey. He tries to cover the town once every thirty days, and his business is growing rapidly.

* * *

Natural swarming does not pay; in fact, it may almost be called a willful waste. Have the combs drawn by strong colonies during the honey-flow, then divide just at the close of the season before the flow has entirely stopped. Young queens mated in nuclei ready for the division are a big asset. Do not try to nurse a little bunch of bees thru on ten good combs if such combs are needed in the harvest to catch the honey-flow. The chances are that the queen is deficient or the nucleus would be in a more prosperous condition anyway.

* * *

There is too much unmeaning business and too little instructive knowledge in our state convention. Many people come to hear and learn, and care nothing about the idle resolutions and dry business. The Standard Oil Company could map out its entire work for the year while we are holding a business session.

* * *

The oranges will begin to put out their tiny leaves by the middle of February. The bloom will follow according to the warmth of the days following; but it is to be hoped that it may not occur as it did last season—far ahead of the bees. From April 15 to May 15 is an ideal time for their blooming period.

* * *

The apiary of Mr. G. W. Dixon, of Beaumont, was looted recently according to the Beaumont *Leader*. Thirty stands of bees were destroyed by the bees being smoked out and their honey taken. Mr. Dixon has offered a reward for the apprehension of the culprit. It is to be hoped that he may succeed in getting the law into action, thus making an object-lesson.

* * *

Ventilating hives by raising the fronts is more than folly in this climate. This is especially true where comb honey is being produced. The conservation of all available heat during the cool nights is necessary to the building of comb in the sections. With extracted honey the practice is nearly as bad if the difference between night and day averages around 35 degrees.

* * *

Recently a friend who had been reading Dr. Phillips' work met me on the street and straightway began to inform me that Dr. Phillips said sage honey would granulate, and that I had said it would not do so. I have samples of my crop of both 1912 and 1914 that show not the least sign of any granulation. Besides this I know of sage honey that has been kept for a number of years that shows no sign of granulating. The fact of the matter is, much of the honey sold as sage is not pure sage by any means. Pure well-ripened sage honey will not granulate.

* * *

There is nothing that adds so much to the sale of an article as the looks. Some years ago there was a car of very fine honey being loaded at our local station. One party, in order to save a few cents, was permitted to put an old weather-stained case in the car, all the rest being new and bright. The sight of this one detracted from the entire car and cheapened its looks dollars where it saved the shipper cents.

* * *

Much better combs can be secured by using medium brood foundation than light brood, and it is really no saving to use light in preference to medium. With plenty of wax on hand to turn into foundation I would prefer heavy brood to either. It very often happens that when foundation is given a colony they are not prepared with wax scales to start drawing it at once, and in consequence the foundation is pulled loose from the wires, buckled with heat, or sagged by the continual weight of bees hanging on it. With medium or heavy foundation there is plenty of available wax in the foundation to start the comb without additional wax, and the foundation is quickly drawn and the wires fixed into the comb at once.

* * *

If short of combs in the extracting season, go to the brood-chamber and remove a frame from each ten-frame colony. By the time the brood hatches from them they would be of little value as brood-combs unless the flow were exceptionally long. Moreover, nine frames in a ten-frame body will often produce more brood than ten frames; for unless they are all perfectly straight and evenly spaced there is often a crowded comb that will not be used for brood anyway. Self-spacing frames are an exception; but the majority of the frames in this state are not self-spacing. When the flow is on, combs are a great asset, and add materially to the honey crop if they are needed badly.

* * *

After two years of careful observation I am ready to state positively that the pepper-trees bloom during every month of the year. I do not mean by this that every tree blooms continuously, but that there are some of these trees in bloom during the entire year. The period of heaviest blooming and heaviest yielding of nectar is during June with a little diminution during July. The amount stored from this source often reaches to thirty or forty pounds. The honey is dark, rank, and but little superior to honey-dew. The commercial importance is not large, as the trees are found mostly in our cities as shade and street trees. They are very beautiful.

* * *

To those who may be interested in the controversy over the distance bees will fly for nectar I offer this. I have secured orange honey in quantities for twelve years, there being only three years in that time when I secured none. One year was a failure; and during the other two the flow came at the same period the button sage was blooming and yielding profusely, and the bees did not leave the sage for the orange. The orange-tree nearest to this apiary is three miles in a direct line. The bees that went this distance have been of the best-known strains in America, and there was no visible difference in the distance any of them would go, all appearing equal to the task.

* * *

One of the oldest and foremost beekeepers in the state, a man who has been successful in the bee business for nearly forty years, recently wrote me in favor of chaff hives for wintering. This may seem foolish to many of my readers; but a careful diagnosing of the facts substantiates his ideas. There is a great variation of temperature between day and night, and then we often have a long spell in winter that is very different from the balmy days often pictured. To illustrate, I am citing some facts given by the local weather bureau, of the temperatures at this station; and it should be remembered that here the weather bureau is located in what is known as the frostless belt of the orange district. There were 23 days in December when the minimum temperature reached a point below 40 degrees; 15 days when the minimum reached below 35, and 11 days when it reached below the freezing-point. The highest maximum for the month was 78; the minimum for the same day, 36. The lowest maximum was 38 degrees, and there were only 8 days when the maximum reached 70. By this it may be seen that, while the temperatures are not exceptionally low, yet the long period of continued cold, and changes, retard the progress of the colony that should be breeding rapidly as early as February. The necessity of having the colony in a warm hive to meet these changes is apparent, and I am inclined to believe that my correspondent is in position to be an excellent judge of the matter.

SIFTINGS

J. E. Crane

THAT editorial, pages 1155 and 1156, was of special interest to me. I have been using frames spaced 1½ inches from center to center for some forty years. I supposed I was not quite up to our best beekeepers in this respect. After using for a few years frames spaced 1⅜ they seemed to me too close for convenience, and I decided on 1½ for myself. After using this spacing forty years I have no reason to regret my choice. So far as the prosperity of the colony is concerned I believe it makes little difference. During early spring 1⅜ might be best, but later 1½ is quite as good or even better.

* * *

On page 1159 Mr. P. C. Chadwick goes for Dr. Bonney for asserting that parcel-post packages are willfully broken into or handled in a very violent manner. Now, one cannot help admiring Mr. Chadwick's charitable view of the matter; but with some rather unpleasant experience we can not help thinking that Dr. Bonney's conclusions are correct. Some time ago we sent to New York a package containing 24 small jars of honey, only fifteen of which reached their destination. We could not learn that any had been broken; but the nine jars were just removed slick and clean. When postoffice authorities were interrogated we were informed that they did not hold themselves responsible unless packages were insured.

* * *

I mentioned in the January issue, page 48, that our bees had to go into cellar without a chance to fly late in November. They have been very quiet since being placed in the cellar, and yet they have flown out on to the cellar floor, I should judge, twice as much as a year ago when they had a chance to fly before being placed in the cellar. Now I am wondering if a large per cent of the bees that fly out of their hives late in November are not lost. If we had an instrument to register all the bees that leave a hive and return on any given day it would often prove very interesting.

* * *

J. E. Jordan tells beekeepers that when "an inspector comes to your place to examine your bees, have him wash and disinfect his hands and tools before beginning his work. Have this done in your presence—do not take his word for it." He does not insist on our changing our shirts and putting on a new suit of clothes, let us be thankful. But would it not be well, when an inspector says he has disinfected his hands when he leaves a yard where disease is found, to let that answer? To doubt his word is to treat him as a liar to start with.

* * *

That picture on page 29, January, of a hive that went thru the fire, is well worth preserving. One of the saddest duties that falls to the lot of the bee inspector is the burning of hives of diseased bees, and sometimes a whole apiary. The most surprising thing about it is the intense heat required to burn the combs unless separated so the heat and air can get at them.

* * *

That new monthly GLEANINGS referred to on page 1153, Dec. 15, came to hand Jan. 15, 1917. I confess I was feeling a little sorry there was to be a change; but since looking over the January monthly I don't feel so bad. I find it lacks but five pages of having twice the reading-matter as one of last year's numbers; besides, it is a beauty.

* * *

Dr. Miller thinks, after studying the United States honey report, we are progressing backward — page 45, January. After trying to fill out blanks for a honey crop for the past two years, I have doubted if they would amount to much. Well, cheer up! they will do better *after a while, we hope.*

* * *

Mr. P. C. Chadwick, page 1159, Dec. 15, is surprised to find an old-maid queen among his bees. I don't see why a queen should not have the privilege of living a maiden life as well as females of other orders of life.

* * *

"Can queens be successfully reared under cover, and mating controlled?" asks the editors of GLEANINGS on page 40, January issue. Don't know—hope so. We shall watch the experiment with great interest.

* * *

"The riper the honey," says P. C. Chadwick, page 1112, Dec. 1, "the less it will granulate," and he is right; and he might have added, the longer it will take it to granulate, and the finer will be the grain.

THE DIXIE BEE

Grace Allen

I HESITATE to take issue with Dr. Miller; but for a fact I can't see how the use of a dummy, division-board, follower, or whatnot, gives any more room to handle the frames, or makes the withdrawal of the first comb any easier. There is just so much room in a hive, and there are just so many combs. As to the time element, *something* has to be done first—either the combs separated (if a comb is to be withdrawn from the center first), or the dummy itself removed, and I doubt that the latter is much the quicker operation. Then if the first comb to be taken out is in the center, the combs have to be separated anyway, just the same. Personally I usually remove one outer comb first, as there are fewer bees there, and more room—the extra space in the hive being divided between the two sides. When the hive is to be closed after inspection, it takes a single twist of the wrist to force all the combs against one side of the hive, followed by another lesser twist on the other side, to push them half-way back. Then when opened, either outside comb can be removed with comparative ease and with little disturbance of bees; and oh! with much greater ease than I, at least, previously experienced tugging away at a stand-pat division-board. Quoting the good doctor, with only a slight change, "Use dummies if you want to, but never again for me."

Another thing in that same paragraph, 1013, Nov. 1, that interested and surprised me was the statement that the outside comb "sometimes" has less brood than the others. With us it *always* has less. And except in the height of the brood-rearing season it has none, and often not then. Our outside combs seem to be dedicated to pollen and honey—except, as I said before, in the height of spring brood-rearing, in strong colonies.

* * *

"What does it mean when bees carry out a good many dead immature bees?" It may mean one of several things. At certain times of the year it may mean chilled brood. If there is no disease, it quite likely means that in the early spring or in the fall, or whenever a sudden change brings on cold nights. In the late summer, the workers often destroy drone brood, tearing the larvæ from the cells and dragging them out, dead, to be dumped in front of the hive. We noticed that in August last year. Were your "dead immature bees" drones? If so, it was merely part of the general destruction of the drones.

* * *

One night early in January I had frankly and forcibly expressed my righteous and housewifely indignation as to the "impudence of that big fly to come buzzing around our kitchen light in the middle of winter," and was preparing to swat it according to the teachings of the times. Then the big impudent fly turned out to be a bee that had evidently varied her frolics in the winter sunshine by a trip into our kitchen, via the open window. The following morning it sounded like spring, the bees were humming so, flying in and out of every hive. This kept up for several days; and one noon as I sat on a hive in the warm sun watching them, and thinking how all this winter flying availed them nothing, I recalled a letter received last spring from Mr. E. G. Carr, just after finishing his work in North Carolina. So I looked it up, and here quote what he said about Dixie bees:

"Regarding the advisability of winter packing for the South, if one has in mind the need of packing because of low temperatures, very few North Carolina beekeepers are interested; but when we get down to the real object of packing, we find it is to keep the bees quiet. As every one knows, Southern bees spend needlessly great amounts of energy in flying when there is nothing to do. Stop this flying by adequate packing, and this energy is conserved to be used in a useful way when the blossoms open in spring."

At present, in the middle of the month, conditions are very different. For two or three nights we have struck as low as 11 to 15 degrees above zero, yesterday's temperature averaging 16, or 21 degrees below normal for that day. Altho at one time in December the official mercury lacked only 2 degrees of hitting zero itself, this present temperature is cold for Dixie Land. I have just come in from the beeyard, where I found several entrances frozen tight with the mixture of rain, snow, and sleet that had beat into them in the early part of the cold wave. Different beekeepers hold differing views as to the harm of these closed entrances; but, moved by "Safety First" considerations, I brushed the loose snow from the alighting-boards and then chopped out enough of the ice to admit the air.

AMONG THE ROCKIES

Wesley Foster

NEVER before have we had such a severe winter as this one; but bees are wintering well, and, what is of equal interest, there is a great surplus of snow in the mountains. The Forest Service reports more snow than any year for eight years past. Coming early, as much of the snow did, it has become well packed, and thus insures plenty of water for late irrigation.

THE HONEY MARKET.

The honey market is getting fairly well cleaned up on extracted honey, while comb honey is still slow sale. The extracted honey sells at the ratio of about two to one for comb honey. If this season is at all indicative of the years to come, many of our honey-producers will be obliged to change from comb-honey to extracted-honey production. The advice of the editors last year to produce more extracted honey either fell upon deaf ears or the beekeepers could not afford to make the change, or they did not have faith in the editors as prophets. For myself, I could not change from comb to extracted honey short of an expense that would consume an entire crop, and a good one too.

From inquiry among the honey-producers of Colorado, it is apparent that the average production per colony is as large in sections of comb honey as it is in *pounds* of extracted. In fact, the largest Colorado yields of the last few years reported to me have been comb-honey-producing colonies. The expert comb-honey producer can secure as many sections of honey as the extracted-honey producer can secure pounds of extracted. Unless comb honey drops below $2.00 per case for 24 sections of comb honey, the comb-honey producer had better stick to his sections and separators. Of course, if the price of extracted honey goes up to 10 or 11 cts. per pound to the producer, then there is more money in extracted honey. The price realized on extracted honey by producers in Colorado has been from 6 to 7¾ cts. At these prices comb honey is preferable to the majority of beemen, because comb-honey production is more apt to leave the colonies in fine condition for wintering.

THE BOULDER COUNTY BEE-CLUB.

The beekeepers of Boulder County have felt for some time the need of an association to aid in a social and business way. January 12 the club was organized, sixteen beekeepers being present. The attendance was rather small on account of the cold stormy day.

Officers elected were: Ward H. Foster, Boulder, President; D. W. Spangler, Longmont, vice-president; S. A. Mendum, Boulder, Secretary-treasurer.

The lines of work out-lined for the club are, mainly, their apiary exhibit, Boulder County Fair; protective club to protect outapiaries from thieves; buying supplies and selling honey; social intercourse between beekeepers.

The next meeting will be held in Longmont at the call of the president.

A PUZZLER TO THE CROWDS.

Several years ago the Colorado Agricultural College operated a special demonstration train over four lines of railroad in Colorado. Three large baggage-cars full of exhibits, two passenger coaches for lecture cars, and a dining-car, made up the train. Domestic science, bee culture, rural school, alfalfa, dairy, silo construction, agronomy, veterinary, and poultry exhibits made up the train. The bee-culture exhibit filled about one-third of a car, the rest of the car being taken with the domestic-science and rural-school exhibits.

The honey-extractor was the puzzler to the crowds. If I was asked once I was asked forty times if that was a churn. The guesses were wide of the mark. A bread-mixer, clothes-drier, cream-separator, corn-sheller, ice-cream freezer, and washing-machine were all mentioned as possibilities.

One little boy stood gazing at the honey cookies in the glass jar for some time, then came up to me holding out a nickel and said, "I will take a nickel's worth of these cookies."

Another little fellow came up and inquired if I could whistle. I had to admit that very little whistling could I do. "Well, I can tell you how to get so you can. When I was ten years old I could not whistle till one day a bee stung me on the lip, and I have been able to whistle ever since!"

[Mr. Foster has mentioned something which all exhibitors have discovered but which beekeepers as a class do not seem to realize. What percentage of the honey consumers know what a honey-extractor is? What percentage know what *extracted* honey is? Is it not a fact that grocers, honey retailers and honey consumers still use the old term "strained honey"?—Ed.]

IN TEXAS

By F. B. Paddock, State Entomologist

RAIN is needed badly over the entire state. The past four months have been abnormally dry. In October the precipitation was well below normal. In November it was decidedly deficient, and in December there was almost a drouth. In this section the rainfall deficiency is 8.23 inches for the past four months. As a result of the severe and prolonged drouth the horsemint is suffering badly. On account of the dry weather during the late summer the seed did not germinate until so very late that the plants were small when the cold weather set in. Now the drouth is causing much horsemint to die. Should a cold spell come before a rain it is feared that there will be but little horsemint next year.

The beekeepers in the mesquite section do not have to worry over a dry winter, for mesquite seems to yield most abundantly after a drouth.

Warm weather has prevailed for over a month now. In protected places the fruit-buds are beginning to swell, and considerable anxiety is felt for the fruit crop if cold weather does not come soon. The bees have been flying freely during the warm weather.

The beekeepers in the southern part of the state are making preparations already for the coming honey-flow. Many apiaries are being moved to more desirable locations. Some of the older beekeepers are buying what extra colonies they can. In the northern sections the fall drouth cut off the honey-flow, and the bees went into the winter with only fair stores. The same condition prevails in the extreme southern part. In the central and southwestern sections the bees are in good condition. The beekeepers are coming to realize more the value of having strong colonies when the honey-flow starts; consequently they are not robbing so closely, and many are now in favor of leaving on a super of honey for early spring food.

Most beekeepers are now wishing for some of the honey that was almost given away last summer. The price has advanced 3 and 4 cents per pound, but there is very little honey left to offer at that price. It is to be hoped that the lesson of the past season will be taken seriously. There is now a local demand for honey that can not be met, and there is still call for carload lots which are out of the question. It is quite likely that the present honey prices will encourage the beekeepers to give their bees every attention in order that they may be in the best possible condition to gather when the spring honey flow is on.

It has been variously estimated that the honey marketed in this state during 1916 was five million pounds, three-fifths of which was produced in the southwestern section of the state.

EXPERIMENTAL APIARIES.

The legislature now in session is to be asked to provide for the establishment of experimental apiaries, to be conducted under the supervision of the Director of the Experiment Station. The need for such work has been felt for many years by the beekeepers of the state. It was some years ago that L. H. Scholl, now a member of the legislature, first suggested such a plan for the benefit of Texas beekeepers. The problems of beekeeping in this state are peculiar, and can not be solved by deductions made from results obtained elsewhere in the United States. The investigations contemplated for this work will in no way duplicate the excellent work conducted by the Bureau of Entomology at Washington, D. C., under the direction of Dr. Phillips. The work of the Texas apiaries will be outlined with a view to solving the problems of every-day management of bees and the production of honey under the varied conditions of this state.

THE NEW DISEASE LAW.

Circular 17 of the Texas Agricultural Experiment Station, superseding Circulars 8, 11, and 14, is just being distributed among the beekeepers of the state. This gives the full text of the foul-brood law, and all the regulations which have been issued by the State Entomologist. The new regulations are effective March 1, 1917. There are now thirty-one counties quarantined against the shipment into them of any bees, honey, or appliances capable of transmitting foul brood. Twenty-five local inspectors are now employed to carry out the foul-brood-eradication work.

One of the greatest indirect benefits derived from the foul-brood-eradication work is the general improvement of the beekeeping industry in the counties where the work is now being conducted. The biggest factor in this improvement has been the necessary change from the old "gums" to movable-frame hives, to comply with the law and the regulations.

Our Neighbors' Fields

By E. G. Baldwin

THE consumption of honey is growing rapidly. From all sides comes this testimony. Not only has the higher price of sugars and of all other commodities boosted the price of honey, but larger amounts of honey are now being shipped to foreign countries than when the war began. Like the cotton crop and cotton prices, at first hit hard by the war, now the conditions on the other side really boost prices for honey as well as cotton. The editor of the *American Bee Journal,* in an editorial in both the December and January issues, calls attention very generously to the great good to the fraternity in general by the widespread advertising of Airline honey. Shortage of fruit the past year, and partial failure of crops in some of the western states, are also mentioned as contributing causes in the raising of prices for honey all over the Union.

The steady campaigns conducted by many beemen everywhere are having their effect. In this connection we feel like calling attention to an excellent article by E. M. Cole in the December number of the *American Bee Journal* that emphasizes some cogent pointers in widening still more the sales and uses of honey. Mr. Cole says, in substance: "Spread the use of honey, and directions for its use, in the domestic science courses of all schools, public and private. Also see that the many pancake flours used contain rules for use of honey, instead of the common syrups. Have honey included in the recipes if possible. Educate the companies that send out baking and demonstrating crews to teach the value and palatability of honey. Baking-powder concerns, too, offer an attractive field for promulgating the merits of honey. Let every recipe of theirs call for honey, and the demand will grow amazingly. Teach grown people, rather than children, the usefulness of our product for their particular needs—an article specially fitted to supply the bone and muscle tissue, rather than the cells of the growing child. All living near communities of foreign-born people should cultivate that market; for such foreigners are used to eating honey, and often prefer dark grades."

* * *

SPECIAL NEEDS OF SPECIAL FIELDS.

If there is one fact more plain today than any other it is that the directions given and found good for certain locations or climates—the North, for example, will not necessarily hold good for places elsewhere, notably further south. It looks now, to judge from an article in the *Beekeepers' Item* for December, as if Texas might soon have an experiment station of its own for apicultural work. It has been pointed out by Louis Scholl and many others that almost all bee-books, bee-magazines, and literature on bees, are all permeated with view-points suited largely to beemen in the North. Only of late have southern conditions become the subject and theme of really serious study and investigation. Dr. Phillips, of Washington, is starting in the South, for reasons made clear by him. The need of experimental work, to be carried on from the viewpoint of Texas conditions, is made very evident in the article referred to. Canada, Iowa, Tennessee, Missouri, and more than a dozen states, have experiment stations. We feel sure that every state in the Union needs its own special station for studying in a practical and helpful way the particular problems that confront beemen in those particular locations. May the Texas station speedily materialize.

* * *

A rare source of honey is the buttonwood (*Conocarpus erecta*). This is a tree that grows along muddy or sandy shores in the southern part of the state, on the adjoining Keys, and even on into South America. It is common in the West Indies, and in Central America also. It belongs to the white-mangrove family, tho not related to the black mangrove of the east and west coasts (*Avicennia nitida*), nor to the so-called red mangrove (*Rhizophora mangle*), which grows a little further south than the black mangrove. These three mangroves are confusing to a newcomer. Only the black so far has proved to be a heavy yielder; but probably much honey that has been secreted by the white mangrove, in localities where it grows abundantly, has been attributed to other sources. A correspondent from the East Coast, below Melbourne, Fla., reports that it came into bloom this year about July 30 or early in August. It usually comes soon after black mangrove. I have been unable to secure any authentic information regarding the quality of the honey, rather supposing that it is difficult to separate it from other sources.

The question is asked, many times a year, whether queens reared in the southern states are as hardy, and their progeny as active and energetic, as from queens reared in the colder North. Many years ago we discussed this question carefully with that master of queen-rearing, Mr. J. P. Moore, of Morgan, Ky. His opinion was most decidedly in the affirmative, I recall. We are pleased to note a similar conclusion from no less an authority in bee matters than Dr. C. C. Miller. In a recent issue of the *American Bee Journal* Dr. Miller says, "The usual reply that queens reared in the South are just as hardy as those reared in the North may be counted correct for all practical purposes." The editor of that journal adds, very aptly we think, the following: "Italian bees, which are hardy, are from a country with a warm climate. It freezes but little in any part of Italy, and the climate is certainly less severe than that of Texas." These conclusions, we believe, are most sound. It has taken ages, indubitably, to produce and fix the present characteristics in bees. Even the lifetime of an individual man is too short more than to modify in a very slight degree, if any, the innate traits and dispositions of the *Apes mellificae.* Hundreds of years of breeding in the South would, we feel sure, work no appreciable change in the honey-gathering powers and propensities of the honey-bee. And, granted even that a slight change might in ages be noted, or even in a few generations, it would take but one requeening to put all back on the original basis of honey-gathering qualities. Dr. Eigenmann, of the State University of Indiana, in his work "Blind Fishes of Green River, Mammoth Cave, Ky.," and of other underground waters of both continents, has shown conclusively that environment does have a mighty effect in course of ages. He proves, by specimens and wise conclusions, that fishes, for instance, that are altogether without light or access to it pass thru a very gradual loss of sight. At first the eye remains intact, but no vision, or at least impaired vision; then the eye itself becomes immovable, and finally only a dark spot, no eye at all, shows where the eye had been; and, at last, no eye or spot shows. But note, first, that this is only where *no* light is admitted, not where partial light is attainable; and, second, that it requires ages longer than man can reckon to work any change of this sort—any partial atrophying of organs. The same, he shows, is true of traits and characteristics. Now for the application to bees. Were bees brought down from the North to the South, not permitted to gather *honey at all* in their new field, then, in course of *ages* (and note the *time* element, almost unmeasurable), such bees might, in their descendants, show loss of honey-gathering or other normal bee propensities; but so long as they exercise their function of gathering nectar, not only every month but almost every day of the year they will certainly lose none of their fondness for nectar nor ability to cull it from the flowers. What is true of one quality must be consequently true of others—hardiness, for instance, which was the theme discussed in the article referred to above.

* * *

One statement made by Dr. Phillips, *Beekeepers' Review* for December, seems contradictory, or at least not in accordance with the facts. He says, p. 457, in his classification of different honeys, "Levulose type, e. g., mangrove, tupelo, sage," and on p. 456 he adds, "If the levulose is considerably greater than the dextrose (levulose type)........*granulation is retarded*" (italics ours). While what he says about the ratios of dextrose and levulose is undoubtedly true, how is it that he classes both mangrove and tupelo under the common heading of levulose type—that is, slow granulation? The pure mangrove honey, so far as we have been able to judge of it in a ten-years' experience, granulates about as speedily as any honey known, and is usually hard enough to form blocks within a month or less after extracting. Pure white tupelo honey will *never* granulate. It seems to us that mangrove has got into the wrong class here.

* * *

Honey needs to be well mixed and liquefied before bottling. Unless this is done, as Dr. Phillips has shown, *Beekeepers' Review* for December, some of the bottles will contain honey with a high per cent of dextrose, and some with an undue proportion of levulose. In neither case could the article be called pure honey. Beemen should be very careful in this respect, or they may unconsciously be guilty of violating the pure-food law. Mix and liquefy the honey well in the larger receptacle, before putting into the smaller container.

* * *

A REMEDY FOR ANTS.

Mr. C. E. Fowler, in the January number of the *American Bee Journal,* suggests a novel method for trapping ants. He sinks a metal tub, any size, into the ground near the apiary, and puts about an inch of water in the bottom. He says that the ants, in their efforts, apparently, to drink, fall in and can not crawl out. Try it, ye beemen troubled with these pests, and report.

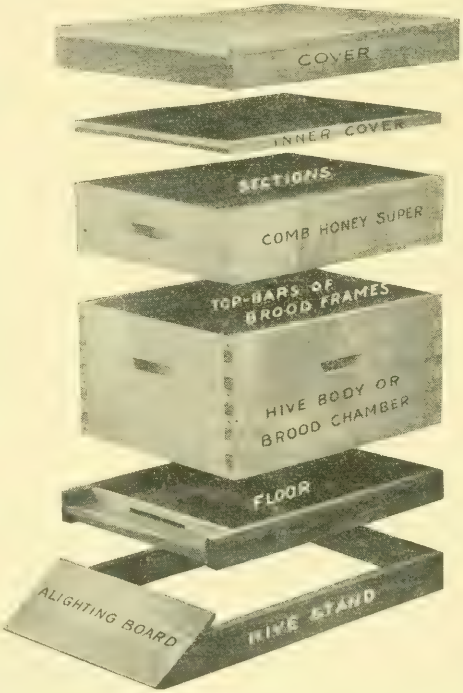
BEGINNERS' LESSONS

H. H. Root

LESSON I. THE HIVE.

IN olden times bees were robbed by their owners every fall. The old box used as a hive or straw skep containing the bees was set over a pit containing burning sulphur; and when the bees had been brimstoned—killed —the hive was turned upside down and the combs of honey dug out. The honey was pressed out of the combs thru a cloth. Since some of the combs probably contained unhatched bees, and others the slightly bitter, mealy-tasting pollen from the flowers, the "strained" honey was likely to have a flavor not quite all its own.

In the last fifty years a greater change has taken place in honey production than in all the former history of the world put together. Colonies of bees are no longer robbed by their owners and keepers. A normal colony in one season will produce on the average from 50 to 100 pounds more honey than the bees themselves can use. It is only this surplus of honey that men take.



THE MODERN HIVE.

Other conditions equal, a colony of bees will produce as much in the stump of a tree as in the best hive ever constructed. The only difference is in the convenience in caring for the colony and in removing the honey. The best hive in use today is a plain box without top or bottom, large enough to hold ten frames of "Langstroth" dimensions—which have come to be standard—$9\frac{1}{8}$ by $17\frac{5}{8}$ inches. The bees build the combs inside these frames, and, of course, the combs, thus surrounded by wood, may be moved about or lifted out entirely. This is the main difference between old box hives and modern hives.

The hive of ten combs constitutes the hive-body proper, or the brood-chamber. In this part of the hive the queen is kept and the brood is reared. It is the lowest part of the hive, and there is nothing under it except the floor with its entrance-contracting cleat in front, and underneath the floor the hive-stand with its sloping alighting-board from the ground up to the entrance.

Above the brood-chamber is the super, so named because it contains the *super*abundance of honey—in other words, the surplus over and above the needs of the bees themselves. If the honey is produced in the small square sections holding about a pound it is called a comb-honey super, and is about half the depth of the brood-chamber. Sometimes this super contains frames exactly like the brood-frames below, except that they are shallower of course. Or the super may be the same depth as the brood-chamber, in which case the frames are identical with those below, tho they are for honey only, not for brood. Usually honey is not sold in the large-sized frames. It is separated from the combs in a centrifugal machine called a honey-extractor, or separator.

There may be from one to five or six supers on the hive at once. Above the top super is a cleated board called an inner cover, and over all a telescoping metal-roof.

If one desires to remove full supers of honey, a board exactly like an inner cover is slipped between the supers and the brood-chamber below, except that in the center is a trap called a bee-escape. The bees can then pass down from the supers into the brood-chamber below, but can not get back up again. By using the escape, in twelve to twenty-four hours the full supers of honey may be removed with scarcely a bee in them, and actually without the knowledge of the bees in the hive-body below.

GLEANED BY ASKING

E. R. Root

P. J. A., Wis.—Should temperature readings be taken every day in the cellar where bees are being wintered?

A. If there are a good many colonies in the cellar, it is advisable to go in quietly, sometimes once a day and sometimes two or three times a week. Bees should always be inspected after a sudden change of temperature outside. If the bees are roaring, it may indicate that the cellar is too warm, and it may indicate a lack of ventilation, or both. Letting in fresh air at the cellar windows, preferably at night, will quiet down the bees. But it is desirable to let the air into an adjoining room before it is admitted into the bee-cellar direct. Fresh warm air directly from outdoors has a tendency to start up the bees. If let in at night it causes less trouble.

H. G. A., Ohio.—Do bees hibernate during winter?

A. Not in the sense that animals and some insects do. When conditions are normal they will go into a quiescent state, during which respiration is low, and activity practically nothing. When the temperature goes below 57 the cluster of bees will become active, and then the temperature will rise.

A. J. C., Pennsylvania.—Is there any wintering problem in the South?

A. While it is less cold in the South than in the North, bees sometimes die of exposure—that is to say, on account of insufficient protection, and a cluster too small, the bees will eat too much, and wear themselves out in going to the fields whenever the air is warm enough, with the result that the colony gradually dwindles. If a colony is strong and well protected there is no danger from winter loss except from starvation. The fact that bees can fly out almost every day in some localities in the South has a tendency to start brood-rearing, especially if they gather a little pollen or honey. When the colony begins to breed, they often consume more than they gather, with the result that the good colonies will sometimes be found starved to death. It follows, therefore, that the average colony in the South requires more winter stores than in the North.

G. A. C., Ohio.—What can a beekeeper do profitably during cold winter months, providing he has no other business?

A. He can nail up hives and frames, and clean floor-boards and hive-bodies that are covered with bee-glue. This can be done by using a hive tool or a putty-knife. He can melt up his old combs and render them into good marketable wax.

He can scrape and sort out sections according to weight, marking on the proper minimum and net weight, and then put each lot by itself. He can put his extracted honey up in bottles or tin cans; and if he is a salesman he can supply the local demand before taking any to outlying towns.

He can read up the back numbers of his journals and books on bees making sure he is familiar with all the developments that have turned up during the previous six months or year. The man who does not keep posted in regard to what is going on in his business will lose out. There is no better time for doing this than during winter.

Occasionally the entrances of the outdoor-wintered colonies will need to be cleaned of dead bees. Melted snow and ice may form over the entrances of some of the colonies, closing them entirely. While light snow does no harm, a wet snow that freezes and seals the entrances may kill the colony. There is a good deal less trouble of this kind in colder climates—where it is so cold, indeed, that the snow seldom melts during mid-winter.

When possible, a beekeeper should attend conventions within reach. He will thus learn enough about his business to pay him many times over for his hotel bills and railroad fare. If he is only a backlotter, and has only a few colonies, perhaps the returns in dollars and cents would not warrant him in incurring the expense; but he will derive a lot of pleasure in meeting those who make beekeeping their sole business.

G. F. Y., Iowa.—Does warm weather have a tendency to keep down the price of honey?

A. Some of the commission men have a fashion of saying in the fall that, as soon as cold weather comes on, the price of honey will rise. As a matter of fact, price often sags after the first of January, when the weather turns colder. During September there is a large quantity of fresh fruits on the market. As soon as these are exhausted the demand for honey, jellies, and jams increases; and, while the price of honey begins to rise after cold weather sets in, this rise is more likely due to the absence of fresh fruits on the market than to the weather.

C. E. S., Rockford, Ill.—1. Does the odor from common tarred paper irritate or injure bees in any way?

2. Would it be advisable to wrap a hive with this material about October 1, let it weather until about the middle of November, and then pack in the winter case?

3. Can a queen be introduced by the honey method to a nucleus just as soon as formed, or would it be best to wait ten or twelve hours until the bees have become quiet?

1. Not that we have ever been able to discover.

2. It is very often used for the purpose for protecting hives during winter; but if you expect to use winter cases we would put

these on the first thing in the fall rather than bother with the tarred paper in the meantime.

3. We would advise introducing a queen as soon as the nucleus is formed. There would be no advantage in waiting twelve hours.

G. A. C., Massachusetts.—Does a winter freeze kill all the eggs and larvæ of the bee-moth?

A. Yes. Sometimes, however, combs in a building are not subjected to a freezing temperature. If there is a stove in the house, or if the walls are double, it may not be cold enough to kill the eggs and larvae. However, there will be no hatching of eggs nor development of the larvae during the cool part of the year. In the South, however, the bee-moth and its larvae can do much damage, because there is no freezing to kill them.

S. C. F., Indiana.—What makes a colony cross at certain times and gentle at others?

A. Weather conditions and the manner of handling the bees have everything to do with it. Bees are apt to be crosser when the atmosphere is chilly or immediately following a rain. But the gentlest colonies will sometimes become very cross after a sudden stoppage of the honey-flow, due either to honey-dew drying up, to rain, or to a sudden drop in the temperature when the nectar has slacked up. Colonies in the buckwheat regions, when the flow stops in the middle of the day, are crosser than when they are working on white clover at a time when the flow is light but continuous from morning to night.

Bees are often cross when working on honey-dew. The saccharine deposit from the aphides on the leaves of certain trees will be gathered by the bees during the morning hours. Along about ten o'clock, and from then on, this deposit either dries up or is taken wholly by the bees. The result is a sudden stoppage in the supply. This sudden stoppage always makes the bees cross. Bees that are robbing are not necessarily cross until their supply is shut off. Then mischief follows.

C. L., Altoona, Pa.—I have noticed that on sunny days my bees will come out on the snow only to freeze. I have my hives well protected from the cold winds by corn stover, but not in front. Would you advise me to put a fine-mesh screen (mosquito netting) in front of the opening of the hive to prevent them from coming out?

In the spring of 1914 I received a hive from a friend. I now have four hives, but I noticed they were quite restless last May, and swarmed considerably. I examined the hive to ascertain the cause, and found several cocoons of queens which I cut out. Did I do right? Do you think that I should obtain a new queen this spring to improve the stock?

A. It sometimes happens, when weather conditions are right, atmosphere warm, and snow on the ground, that the bees will fly out in large numbers; many of them will fall on the snow, and chill, never to rise again. If the snow is only a thin coating, melts away, and it is followed by another warm day, these chilled bees will rise again and go into the hive; but when they fall on snow that is deep they will die.

The bees referred to had evidently started queen-cells; and as long as these were in the hive they would continue to swarm as the young queens prepared to emerge. You did right in cutting the cells out. It would be safer for you to get a queen of good stock rather than depend upon what might be raised in the hive.

T. O. S., Missouri.—Is it safe to use combs in which no brood has been reared, but which have been in a super over a colony that has had American foul brood?

A. While in most cases perhaps such combs would not impart the disease there is always danger of it. The only safe thing to do is to melt up every comb that has been in contact with bees that have had American foul brood. Combs that have been in a hive having European foul brood may be used over again, providing the disease has not gone too far, and providing that the beekeeper himself uses ordinary precaution.

J. A. S., Michigan.—Is the ordinary house cellar a good place to winter bees?

A. That depends. When the temperature goes below 40 and at other times goes as high as 60 to 65, it is a very poor place. Except for a few hours or a day or so the temperature should never go below 40 nor much above 60. If higher than the latter point, there should be a large amount of ventilation. If the winters are more or less open so that the bees can fly about every week or so during winter, it would be better to discard the cellar and winter bees outdoors in double-walled hives or packing-cases.

T. O. C., Tennessee.—What makes wax become dark during the process of rendering?

A. Wax from old combs will be darker than that from new combs. When combs are melted up in a galvanized receptacle they will be darker than if melted in one lined with tin. Wax that is kept hot in a metal container for a long time will become dark, and it is, therefore, desirable not to keep it in a melted condition longer than necessary. Hard water has a tendency to darken wax more than soft. Wax should not be heated more than twice—first, in rendering it; second, in putting it in cake form suitable for market. Every time wax is heated it is darkened slightly.

R. A. T., New York.—I am a producer of comb honey. I am well equipped with a complete set of fixtures. I have had a fairly good demand for all I could produce. Would you advise me, in view of the strong demand for extracted honey and the sluggish demand for comb honey, to run for extracted next year?

A. We would produce more extracted honey. It would be a mistake to drop comb entirely, because a large number the coming season will run for extracted because the price of it is approaching more nearly the price of honey in the comb.

JUST NEWS

Editors

DR. Bonney was one of the interesting personalities at the Iowa convention. He is the man who has built up a trade-name for "Bonney's Honey." He is an interesting talker, bubbling over with good-natured comment.

* * *

Mr. Harold Horner, of New Jersey, will shortly describe his method of producing extracted honey in sky-scraper hives, five or six stories high, and wintering in two-story hives. He is one of the best beekeepers in New Jersey, and at the same time a large fruit-grower. He knows how to get a good crop of honey with a minimum of labor.

* * *

CAN YOU BEAT IT?

An interesting back-lot beekeeper is a neighbor of J. L. Byer, Mr. C. W. Hellem. The editor visited Mr. Hellem's apiary with Mr. Byer, securing the picture shown at the bottom of page 108.

Mr. Hellem, tho living right in town, has a yard of 25 or 30 colonies. He started with two or three colonies which he ran for increase, but his main increase came from 20 one-pound packages of bees which he secured from the South, each having an untested queen. He hived bees on frames of foundation because he had no combs. From the two or three colonies he already had and the nuclei from the pound packages he took 2000 pounds of honey, built all the nuclei up to full strength, and now all the colonies are in double-walled hives in splendid condition for next season.

Mr. Hellem is quite a mechanic, makes all his own hives, and it is no wonder that his little yard is one of his proud possessions. He is thinking of the days when he shall be out of the store, out in God's free air, giving his entire time to the bees.

* * *

"DOUBLY BLESSED."

Mr. Wm. Couse, in his lantern-slide lecture at Toronto, when he came to the picture of our special correspondent, J. L. Byer, remarked that he has been doubly blessed during the past year. He had secured a crop of honey, about twice as large as he ever had before, and a pair of twins. When the editor called on Mr. Byer recently the latter remarked that we would "have a duet, in all probability," when we arrived at the house. We did not know what he meant; but when we reached his home we found a fine pair of twins, and later on along in the night heard something in the nature of a "duet" from the aforesaid twins. They certainly can make their wants known, singly or in pairs.

* * *

The Northern California Beekeepers' Association held its annual convention in Sacramento Dec. 29.

There was a good representation of commercial beemen in spite of the short crop. Pres. H. K. Hill, of Willows, and Secretary A. L. Heim, of Fair Oaks, were re-elected. E. L. Sechrist, of Fair Oaks, vice-president, Prof. Willis Lynch, of Stockton, and M. C. Richter, San Francisco, are the directors for the coming year. This is also the California branch of the National Association.

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MR. ALVA AGEE.

Mr. Alva Agee, perhaps the greatest living advocate of lime for sour soil, formerly of State College, Pa., is now Secretary of Agriculture of New Jersey. The best part of it is, he is also interested in beekeeping, and to that end is doing everything in his power to elevate the industry in his state.

There are many localities in the state where clover cannot be grown because the soil is too acid; but a liberal application of lime will make the growing of clover and all other legumes possible. We may rest assured that Mr. Agee will see to it that the farmers of New Jersey will be properly informed as to the value of lime for the soil.

* * *

"GETTING FANCY PRICES."

Mr. R. D. Barclay, President of the New Jersey Beekeepers' Association, is a dry joker. He kept the convention in a perfect uproar of laughter while, apparently, all serious he told the members how he secured "fancy prices" for his black bug-juice honey; of how he sold it in gallon lots at $2.50. It was not all a joke either, for he found that a large number of people, especially those of the foreign persuasion, really preferred a dark strong-flavored honey. He showed a bottle of the stuff so black that it was perfectly opaque. It seemed to be a combination of every flavor with a little honey-dew, but of just such a taste as would suit some foreigners who have been using just that kind of honey in their native land.

He has developed a mail-order business, and actually had the nerve, he said, to send out samples of this blackstrap, and on these samples he made his sales. With a twinkle in his eye he said a gallon of it would "last a long time;" but he insisted that he had actually received repeat orders.

The National ought to have Mr. Barclay give them a good talk on getting fancy prices on bug-juice honey.

* * *

THE SHORT COURSE IN APICULTURE AT ONTARIO.

Morley Pettit, Provincial Apiarist of the Ontario Agricultural College, has been holding a short course in apiculture, beginning Jan. 8 and extending to the 26th. The apicultural school at Ontario College is one of the best on the continent. The graduates under Prof. Pettit are making good. Mr. F. Eric Millen is a sample.

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THE NEW JERSEY CONVENTION.

The New Jersey state beekeepers' convention, on Jan. 9 and 10, was one of the best meetings we ever attended. While the attendance was not large, the enthusiasm and general excellence of the discussions were of the very best. State Apiarist and Foul-brood Inspector E. G. Carr is secretary of the association. This is enough to explain why the convention was a success.

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THE NORTH CAROLINA CONVENTION.

The state beekeepers' convention held at Winston-Salem, N. C., on Jan. 11, had the largest number present of any of the meetings that we have attended this winter. There were over 200 present at the opening of the meeting, and the enthusiasm was very high. The secret of this large attendance was doubtless due to the energetic efforts of State Entomologist Sherman, and to Mr. Geo. H. Rea of the government extension work. Mr. Rea was formerly Foul-brood Inspector of Pennsylvania; and it is evident that he is doing most excellent work in North Carolina. Both Dr. E. F. Phillips, of Washington, and E. R. Root, of Medina, were present.

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DEATH OF WALTER S. POUDER.

Walter S. Pouder, of Indianapolis, Ind., well known to beekeepers all over the United States, died at his home Jan. 5. His death was not unexpected, as he had been slowly failing for a long time. He was a dealer in supplies, a good business man, and always prompt in his dealings. He built up quite a large business, for he was a good advertiser, and the best ad. writer perhaps, among all the dealers in bee-supplies.

He had a very large circle of friends as well as business acquaintances. He was quiet in manner, always courteous.

During the later years of his life he labored under the handicap of being entirely deaf, and during the last year or so he was partially paralyzed.

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F. ERIC MILLEN AT IOWA.

F. Eric Millen, Secretary of the National Beekeepers' Association, former apiarist and foul-brood inspector of Michigan, has accepted a position with the Iowa State College at Ames. He will take up entomology and beekeeping in particular. We have always regarded Mr. Millen as a good man. What will be Michigan's loss will be Iowa's gain.

* * *

A NEW BEE INSPECTOR FOR SANTA CLARA COUNTY, CALIFORNIA.

Mr. Earle L. Morris has been appointed inspector of apiaries for Santa Clara Co., California, one of the greatest fruit-growing districts in the world. Mr. Morris has been county entomologist for a good many years. A short time ago he was appointed Horticultural Commissioner, and in addition he is now inspector of apiaries. In certain sections of Santa Clara Co. foul brood has been very bad; and there is no doubt that Mr. Morris will be able to improve conditions materially.

* * *

THE DOMESTIC BEEKEEPER.

The old *Beekeepers' Review,* formerly published by W. Z. Hutchinson, and later edited by E. D. Townsend, North Star, Mich., has been changed into what is now called *The Domestic Beekeeper.* With this change has come an enlargement, better ink and paper, and better all around. Those who have any difficulty with poor eyesight will doubtless welcome the large type used. The change of name was "to make it a home affair," because it will be edited and published by one family, E. D. Townsend and family, North Star, Mich., and because it will be a "a home affair" for its subscribers. Its object will be to stimulate organization and co-operation. We wish the new old journal and its publishers success.

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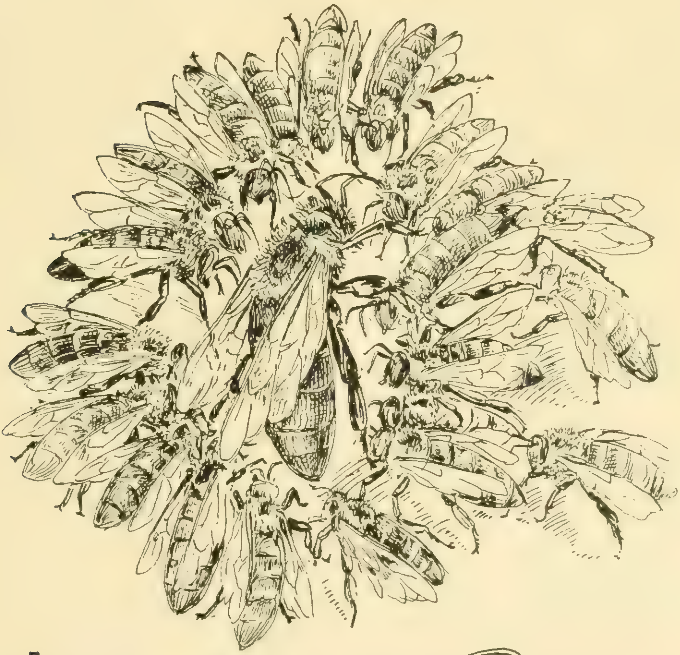
So far as we are able to learn, the judge has not yet rendered his decision in the case of the beekeepers versus the Coniagas Reduction Co., which was tried last November at St. Catherine's, Canada.

Mother Bee NURSERY RHYMES

By M.G.P. (Mother Goose Plagiarized.)

"Honey Bee, Honey Bee,
where have you been?"
"I've been to the hive
to visit the Queen!"



"Honey Bee, Honey Bee,
what did you there?"
"I fed her and stroked down
her soft yellow hair!"

HEADS OF GRAIN FROM DIFFERENT FIELDS

A Song of the Suburbs

BY GRACE ALLEN

Here where the near low curve of the country
Reaches the city's most rambling edge,
Here where the long hard lines of the pavement
Are lost in a tangle of wayside hedge,
Here where the clear-eyed air shakes his garment
Free from the soil of the toiling smokes,—
Here stand our homes, where a field-rim circles
The worn-out ends of the long street-spokes.

Here we have builded our neighborly houses,
Half in the country, half in the town;
Here we have greeted our neighborly neighbors
Over the fence as the sun went down.
Here we have planted our lawns and our lilac,
And smiled undismayed when the lawns wore bare,
For here are the faces of play-flushed children
Fairer than even green grass is fair.

Here when the morning is born in the stillness
Faintly comes floating the crowing of cocks;
Here in the springtime we cherish our gardens,
While faithful old motherhens hover their flocks;
Here when the summer shines over the clover
Swiftly our bees flash away thru the sun,
And here, while we thrill to their magical humming,
We share in the wealth so exultantly won.

What tho no luxury graces our living?
We've laughter and roses and hives under trees!
What tho we labor from dawn till the darkness,
Eager, devoted, content—like our bees?
Life, in the fullness and glow of his vigor,
Is walking our every unpaved street,
And skies like the eyes of the Love that is Heaven
Shine where the town and the country meet.

* * *

Pollen in Shallow-Frame Honey

Our market prefers bulk or chunk honey. We dislike to cut the honey out of sections for this trade, and have been producing it in the shallow extracting-frames; but the bees delight in storing pollen in these nicely drawn combs. We place our extracting-frames on, following the clover flow in order to get the foundation drawn out and catch what little honey there is from mid-season flowers, such as sweet clover and heartease. Ragweed blooms profusely about this time, and produces an abundance of pollen which the bees store in these frames and afterward finish up by storing goldenrod and bluevine honey on top of this ragweed pollen. If we keep the supers off till the fall flow comes on, it induces swarming. Can anybody suggest a remedy? We never have any trouble with this ragweed pollen going into sections—why?

The Indiana Beekeepers' Association should get busy this winter, and go after our law-makers to give us more inspectors. The state entomologist's office is badly handicapped for want of funds to protect this very important industry in our state. We are entitled to more recognition — let's have it. The State Horticultural Society and the dairy and stock industry are well taken care of, but we beekeepers are left out in the cold. Whose fault is it? We are not going to get the needed protection unless we go after it. There are 500 colonies of bees within a radius of five miles of my place, and foul brood rampant; yet we never have had a clean-up. It's discouraging, but I have hopes. S. H. Burton.

Washington, Indiana, Dec. 16.

* * *

Quality of Stores or Lack of Protection

In the fall of 1915 a large stone wall north of my bees was removed. My protection gone, I moved the ten colonies to lower ground and made the little shelter I had time for. On the east was a low hill, but that was about all. The bees were in hives of the A. C. Miller plan with frames parallel to the entrance, half-inch super-cover on the hives, a super of dry leaves over it, and with deep tar-papered telescoping covers over all. The entrances were ½ by 3 inch.

The apiary is on low land 100 yards from Palmer's River. Twice in the spring the water has almost reached the apiary. Our thermometer in the morning is 2 degrees lower than at neighboring farms; and to go in any direction one can readily see the difference of air on a cold morning.

Well, with 20 to 30 lbs. of stores I lost no sleep worrying about the bees; but in January we had ten days of mild weather which, no doubt, induced breeding. Then in February and March we had zero weather followed by a cold and wet spring. The colonies dwindled fast; and by uniting I had, on April 1, just one colony. There were two or three frames of dead bees in a hive, very odorous, with two or three frames of honey. Should I have extracted the stores and fed sugar?

Last year we had much clover. I bought

HEADS OF GRAIN FROM DIFFERENT FIELDS

two nuclei of five frames, secured 150 lbs. of honey, and increased the one colony to five.

Rehoboth, Mass., Nov. 24. Robt. Elwell.

[Possibly it was a combination of circumstances, altho if the honey in the combs was not granulated we do not believe it was responsible for the loss. The unfavorable weather was probably the principal cause of the losses.—Ed.]

* * *

Still Another Sting-proof Bee-Veil

I should like to be of help to Mrs. Allen and to Mrs. Chadwick, who have referred to the matter of bee-stings. It seems to me it is foolish for a woman to expose herself to bee-stings unnecessarily. I know it is not so convenient to work in protecting garments; but the feeling of security that such garments impart is very comforting to me. I fear stings, not because I have ever had any alarming experience with them, but because they are uncomfortable for a time.

If Mrs. Chadwick loves to work among the bees, why does she not protect herself thoroly and keep on working? I am convinced that no one is ever wholly immune; also that the condition of the person and the point at which one is stung has a great deal to do with the effect of the poison. The worst experience I ever had was one very warm day. I was quite warm, having been working in the sun for some time. Just one bee stung me on my ankle. It did not make me ill, but it was swollen badly when I came to care for it, and it continued to swell and pain me, the angry red of the inflamed part being twice the size of my two hands, and this did not abate much for about a week, and was very painful. I attribute the trouble to my being so heated, and to allowing the sting to remain in the wound for so long a time. I shall wear high shoes when working with the bees, and be careful where I put my foot.

I purchased a globe bee-veil when I first handled bees, but I was apt to get tangled in some way that would break the mesh of the veil, and it didn't take me long to learn that a bee could find the break much easier than I could; and one bee inside the veil is worse than a dozen with no veil on. I now have a veil that will not tear. I took a strip of galvanized wire screen (I prefer this to black), 14 inches wide and 34 inches long. I joined the ends with wire threaded thru and thru, covered the top with white cloth, and joined the lower edge firmly to a long low-necked over-the-head white garment with long sleeves and a belt. Mine comes nearly to my shoe-tops, but the length does not matter if long enough to belt firmly so no bees can crawl under. In the sleeves I made thumbholes, buttonholed, to slip over my thumbs to hold them down. I failed to find rubber gloves to fit me, so I sewed a pair of white stocking-tops to the wrists of a pair of cheap canvas gloves—not too snug a fit—melted some beeswax, and gave them a good coating of that, and put rubber cord in the top. It takes but a moment to put this regalia on over my head, and, when taken off, I put garment and gloves inside the wire and know just where to find them, for it would be hard to lose the screening veil. I am safe with this on, and I feel safe.

I made one veil 12 by 36. It was two inches too large around the neck; had a tendency to slip down over my shoulders, and was too low on the head. Fourteen inches raises it clear from the head. I stick a hat-pin thru wire and hair to hold it firm.

Glover, Vt. Jean White.

* * *

Few Beekeepers are Real Good Book-keepers

A book-keeping beekeeper is likely to be a successful beekeeper, and more might keep books if less writing and time were required. The smaller beekeeper might well keep a record of each manipulation of each colony, and thereby learn much. I speak from experience.

In the beginning I found such a dairy required no little time; but gradually I have devised abbreviations as occasion suggested, which have lessened the work and increased interest and satisfaction in the record. At all events, for the sake of general understanding, such a glossary may well be standardized and used wherever convenient.

The following abbreviations have pretty well served my needs:

H. (capital)	Honey
Q. (capital)	Queen
Qrt.	Queenright
Q'less	Queenless
Qc (s)	Queen-cell or cells
Bd.	Brood
Dr. bd.	Drone brood
W. bd.	Worker brood
Sbd.	Sealed brood
C. (s) (cap.)	Comb or combs
Fr. (s)	Frame or frames
S. (capital)	Super
½ S.	Half-depth super
Fl. d. S.	Full-depth super
Mt.	Empty
Ex.	Excluder
Es.	Escape
Ch.	Chamber
OK.	All right

Explanation:

Whenever a single letter is used alone, entirely, it should always appear as a capital; example, A, H, C, S. Plurals are indicated by adding a small (s); if to follow a final

HEADS OF GRAIN FROM DIFFERENT FIELDS

(s), put a dot between; example, Fl. d. s. s. When several abbreviations are strung together, put a dot after each to avoid confusion; example, No. 13 Q. lss gave Qc + 2 frs. sbd & H. Took 2 frs. mt. C. Other abbreviations will no doubt suggest themselves to those who may take up these suggestions.

Lyndhurst, N. J. B. Keep.

* * *

The Wild Sunflower

The plant referred to as giving the yellow honey, page 1085, Nov. 15, is the wild sunflower of Florida, commonly called jiggerhead, also blackeye Sue. The center part is black. It flowers for 3 to 8 weeks. The honey is yellow, and of fine flavor. It granulates quickly. Beekeepers will do well to get some of the seed and get it started in their marshes. It will bloom after the water has risen on the stalks a foot or two. C. H. Clute.

Sanford, Fla., Dec. 1.

* * *

The Growing of Sweet Clover in Llano County, Texas

Will sweet clover grow in our portion of the state? The land is a deep-red sandy loam—more or less stony. We are subject to long-continued drouths, sometimes lasting for months. Some of the land has been in cultivation for 30 years or more.

Llano, Tex. L. B. Smith.

[The above inquiry was submitted to Mr. Frank Coverdale, Delmar, Ia., who replies:]

No doubt there will have to be special methods used in starting the crop, such as feeding at the right time, and covering sufficiently deep to insure growth. The feeding should be done at a time when sufficient rains will be likely to follow in order to give the young plants time to root sufficiently to withstand the oncoming drouth. A seed-bed mulched and firmed will best suit such a locality.

It is not always possible to secure a stand on land by sowing on the top of the ground, on account of severe drouths which will affect the hard uncultivated ground just that much worse. A little experimenting is necessary in semi-arid regions, even where success has been attained by the growing of a stand from seed scattered off from a former stand.

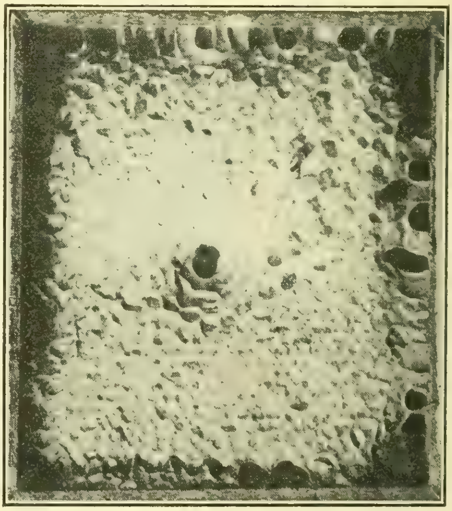
When a stand has once been secured it will be easier to get the next, because the large long roots will have broken up the sub-soil and left deep cavities to be filled up by heavy rains, so that the water is stored below, to be used later during severe drouth.

I would suggest that Mr. Smith plow a field, and, just before a rainfall is due, harrow the ground thoroly, then drill in, one inch deep, ten pounds of scarified sweet-clover seed per acre without a nurse crop. I believe that this clover will be resistant enough to make good in his locality, especially if the one growing it is determined to succeed.

* * *

Freak Bees that Made Sections "Wholly Holey"

This new "style" of comb honey is a product of one of my best colonies (pure Italian) the last week in June. With three comb-honey supers almost finished (one finished had been taken off) the bees did a very foolish thing—cast an immense swarm. I put the swarm in a new hive with full sheets of foundation, removed four frames, and gave them, instead, four of their brood-frames. I then put them on the old stand with the three supers on top; removed the old hive to a new location, cutting out all queen-cells but one and giving them the four frames of foundation. With their new queen they built up in a ten-frame hive ready for the September honey-flow.



Two supers of sections, each with a hole in the center of the comb.

Here is the result. This section is one of 28 built in an N super with clean fences between each row of sections. Every one of the 28 had a hole thru it, all very much alike, all near the center. I put on top another super, as this one was about finished. A part of the sections were pretty well drawn out, and in each one a hole was made as in the finished super. In all these the bees cut thru the foundation sheets. There are no holes in the four brood-combs that they built.

This queer work has been very interesting, and a great puzzle to me. As it was in the cool part of the season the holes were not for the purpose of ventilation.

Wichita, Kan. O. J. Jones.

Do Bees Dump Granulated Honey in Front of the Entrances?

I notice in S. H. Burton's article, "A Good Showing for Combless Bees from the South," page 1121 of the December number, that he says, "It is pure waste to try to carry this honey over in uncapped sections, as it soon granulates; and if put back on the hives next spring the bees carry it out and dump it in front of the hive." Is it always true that granulated honey is carried out in front of the hives? or is this true only when uncapped as Mr. Burton states? For the winter of 1915 I used three or four hundred pounds of capped granulated honey for winter stores, using two to four frames in each hive. Altho each colony had at least fifteen pounds of this granulated honey, I did not notice any honey carried out in the spring. I was told by a prominent beekeeper of this locality that granulated honey would be reliquefied by the bees in the spring as fast as they needed it for food, provided they could get water at the time. Is this not true? or is it carried out in front of the hives as Mr. Burton states? or do factors enter in so that either may be expected?

I think Mr. Burton refers to comb-honey sections; but would there be any difference between comb honey and extracted frames under the same conditions? Wells Rose.

Sunnyside, Wash.

[It is not always true that granulated honey is carried out in front of the entrance in the manner stated. A good deal depends upon the kind of honey, how solid and dry it granulates. If it granulates moist, and stays so thruout the winter, particularly if it is capped over, the bees are not likely to carry it out; but if the honey granulates solid so that it is in a dry granular condition the bees may or may not carry it out. If there is plenty of moisture in the hive so that the honey is softened up a little they will let it remain.

As to whether the bees reliquefy granulated honey we have our doubts. They may add water to it and soften it down, but it would not be the same as honey that has been heated to a temperature of 125 or 160 degrees until it is brought back to its original liquid condition. Any granulated honey can be made soft and liquefied to a certain extent by adding water to it, and this the bees undoubtedly do, or, rather, they add their saliva, and it is possible they may at times add water to it, softening it down so they can use it.

Honey in uncapped sections is much more likely to granulate than when the cells were sealed over.

There would be no difference between comb honey in sections and that in regular brood-frames.—Ed.]

The Distance Bees Fly Depends Upon the Bees

I have been experimenting with different strains of bees for several seasons in the effort to find out the distance they fly and gather honey. I have found some of my bees over four miles away, while those from other strains are not found over a mile from the hives. I think the difference is in the strain of the bees more than in anything else. The hives containing the bees that fly a long distance are very heavy in stores, while those with the short-distance bees are light.

Central City, Ky. E. C. Frazier.

* * *

Digging 'em Out.—Photo by F. J. Lillie, Cory, Pa.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Beekeeping to the Front in Northern Wisconsin

From a financial standpoint beekeeping in the northern part of our state has been very profitable. One beekeeper with a start of 26 colonies in the spring increased to 42 and extracted 5000 pounds of honey. He has a small farm of 15 acres, and runs the bees only as a side line.

Another with a start of only 9 colonies increased to 22 and took off 600 pounds of comb honey. There are many others that I might mention.

In August, State Inspector France was here and we organized the Northern Wisconsin Beekeepers' Association with a membership of 17. In coming together on a coöperative basis we find that it is much to the advantage of all members, both in buying supplies and in selling honey.

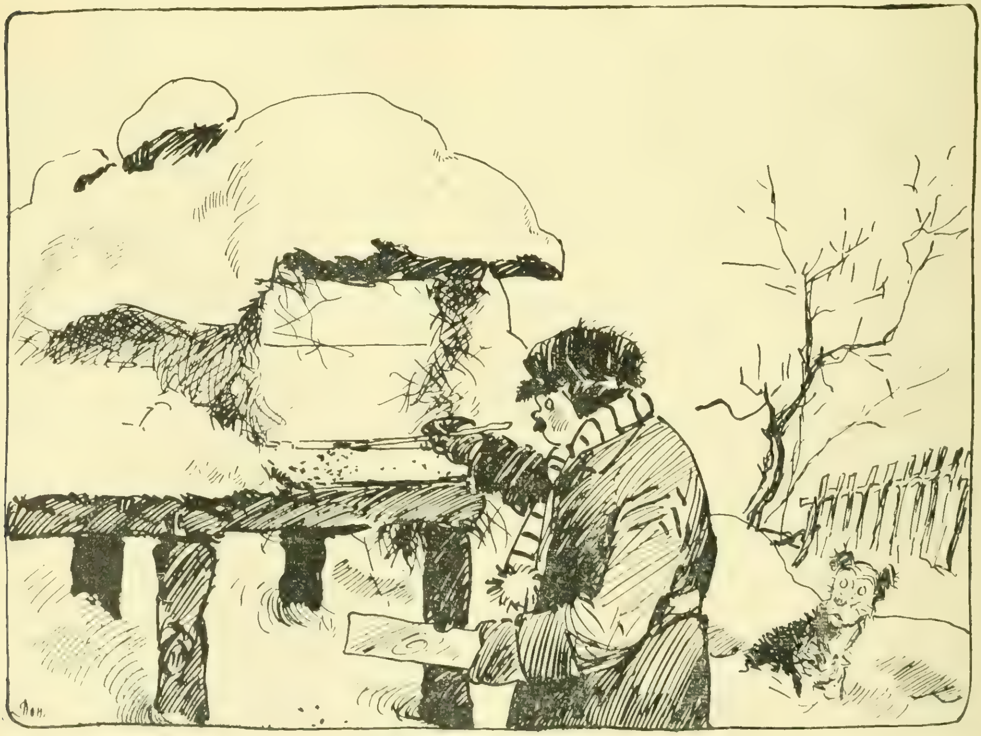
The county fair association granted us the use of a booth for display this last fall—the first display of honey products ever made here. It was a great attraction to all classes of people, and very instructive at the same time, as we had a glass hive of bees and an exhibit of extracting-frames, comb-honey sections, and extractor to show the people how the honey was taken from the comb, thus proving that it is not strained honey.

One exhibitor had one-pound glasses and ten-pound pails. These we sold. A lady visiting the fair from Minneapolis bought a glass jar, took it home, and in a few days ordered 20 five-pound pails shipped C. O. D. She had taken orders among her neighbors. This shows that it pays to advertise.

The fair (Langlade County) was run on the free plan this year as an experiment, and was a success, both in point of exhibits and attendance, also in a financial way. No charge was made except for concessions. The same plan has been decided on for 1917.

The bee industry is getting to the front very rapidly, and I think that by next year many more farmers will take an interest in bees.

Antigo, Wis. E. H. Marsh.



THE BACKLOT BUZZER

BY J. H. DONAHEY

Speaking of successful wintering, Benny Sourweed says he generally adopts a course somewhere between the feller who keeps his bees in a nailkeg and the beginner who stopped up the entrances with a rag to keep 'em from freezin' to death.

OUR HOMES

A. I. ROOT

Blessed are ye when men shall hate you, and when they shall separate you from their company, and shall reproach you, and cast out your name as evil, for the Son of man's sake.—Luke 6:22.

Dear Sir: — Some one said you knew "how to be happy when people abuse you." Do you mind telling me?

Dr. C. R. Lytle.
McPherson, Kan.

On examining the letter-head containing the above plaintive request I found the following:

"Dr. Clinton R. Lytle, County Health Officer, McPherson, Kansas."

The fact that the good doctor has been appointed *health officer* affords us the clue as to why he wants to know "*how* to be happy," etc. My dear doctor, I am glad to tell you (and I hope I speak the truth), that I *do* know how to be happy when people abuse me. I know *how*, but sometimes it takes quite a little spell to "pull myself together," if you will excuse the expression, and put in practice this knowledge.

If any of the readers of Gleanings have ever undertaken to discharge faithfully the duties of such an office, they can, perhaps, realize the good doctor's predicament. Unless one possesses a wonderful gift of tact, and has a deeply rooted faith in the Lord Jesus Christ, it is not an easy matter to undertake to interfere with the way in which people manage their domestic matters in their own home. But, on the other hand, if a public officer would shirk responsibility, and let everybody go scott free, no matter how much such parties were annoying or injuring the community, he might have an easy time of it, unless, indeed, somebody on the other hand should grumble because he did *not* enforce the law. Those who never undertake to serve the public have little comprehension of the trials that meet any one who insists on the strict enforcement of law. You see enough of this in temperance work. Under the circumstances do you wonder that good men refuse to accept important offices? and yet what will be the result if bad men—say men who would willingly accept a bribe—are permitted to fill these offices? Well, how is it possible, considering the above, to be happy when you are abused and found fault with for doing your duty? I know of no way but to avail yourself of the Bible promise—keep quiet and gentle while you insist that each man and woman shall obey the law and do their duty. Look pleasant if you can, but do not listen to Satan when he persists in keeping you stirred up by the remembrance of the indignities.

Years ago in our teachers' meeting this very matter was being discussed about being abused for righteousness' sake. I ventured the remark that *somewhere* in the Bible it says not only "rejoice and be glad," but it says also, "*and leap for joy.*" The superintendent of the Sunday-school said, "Mr. Root, I should like to know *where* you will find that passage in the Bible." Then the rest began to laugh; and the pastor of our church, I think a "D. D.," led the laugh, and suggested that I must have found that extract somewhere else than in the Bible. As I was a comparatively new recruit at the time in the Sunday-school work and teachers' meeting, I felt a little sore about it; but before the meeting closed I arose triumphant and read to them the verse just following the one at the head of this Home paper. There we have it in plain black and white—"Rejoice ye in that day, and leap for joy." Of course we do not understand that we are to leap for joy in the presence of those who have abused us; but when you get off away by yourself, and the bitter words that have been used toward you are still rankling in your heart and brain, then is the time when you can shout praises, and perhaps leap for joy just because it has been your privilege to be persecuted as were the good people who, perhaps ages before, were subjected to a like experience.

Let us now have the remainder of the 23d verse of the 6th chapter of Luke:

"Behold, your reward is great in heaven; for in the like manner did their fathers unto the prophets."

Those who consent to appointments to public offices, especially the offices where they are supposed to look after things disinterestedly for the good of community, will understand how often they are criticised and abused by one class of people for doing their duty, and perhaps at the same time are criticised by another class because they do not do more of the same thing. What shall we do under the circumstances? Go straight forward; take time to explain gently and kindly that you are a servant of the public, and that what you do is for the public good. Make for peace with those who abuse you, if possible. Great things are possible, as I know by experience, if you succeed in not getting ruffled up and preserve a kindly demeanor. I know how hard it is, and sometimes I think it almost impossible to keep cool when I am unjustly criticised. But at such times hold fast to the little prayer, "Lord, help," and it will not be very long before you feel the presence in your heart of the Holy Spirit, and it will almost seem to you that the dear Savior is near, the all-powerful Friend who has said, "Lo! I am with you alway, even unto the end of the world."

Just recently a man passed thru our town at a reckless speed. The children were out on the street because the weather was very warm. He was flagrantly breaking one of the town ordinances regulating speed. Two men called on the man after it was all over, and ventured a remonstrance. They did not threaten to have him arrested, but suggested to him that he was *liable* to arrest if he continued to ignore the ordinance in regard to the speed of automobiles.

"Personal liberty" has been talked a little too much; and perhaps all of us need reminding to keep us loyal to the ordinances that are passed by our towns and communities, that it is a Christian duty to stand up and encourage the officers of the law.

Of course we mailed our good friend a bundle of the little tracts that have often been referred to—"How to be Happy when People Abuse You;" and we stand ready to furnish still more of them to those who are interested in the matter.

In our morning reading we came across the following that comes a good deal along the same line. You will remember that after Jesus sent out the seventy, as we are told in Luke 10:17, they all returned with great joy, saying, "Even the devils are subject unto us in thy name." But the Master replied later on in the 20th verse as follows: "In this rejoice not, that the spirits are subject unto you; but rather rejoice because your names are written in heaven."

After reading the above I fell to thinking of this matter as I had never done before. With all our trials and worries and persecutions we have a right to rejoice and be glad, *because* our names are written in the long list of those who have gone before us in ages past, because they loved righteousness and hated iniquity. As I grow older I meet with great and good men and women. It is often a happy surprise—a surprise that gives me a thrill that I cannot describe, because I am recognized as a co-worker among good and busy people. At a recent Chautauqua gathering, as I handed in my ticket the manager said that Prof. Montraville L. Wood had sent a special request to see me. When I found him he said something as follows:

"Mr. Root, my father was a beekeeper and took your journal. I had heard him talk so much of you in your earlier years that I thought it would be a great pleasure to meet you. I know something of your early experiments in bee culture, and I remember how you decided to give your inventions to the world rather than to get out patents on them, etc."

The professor gave us some wonderful experiments with the gyroscope, and told us how after the invention has lain idle for over *forty years* it is now proving to be a great blessing to the world; and among other things he said the recent successful trip of the Deutschland under the seas would not have been *possible* had it not been for the gyroscope taking the place of the magnetic needle. The gyroscope was invented in 1852, when I was twelve years old. I saw an account of it in the *Scientific American*, and soon after that I made one that would work. When I was sixteen years old I was going around lecturing in country schoolhouses, as I have told you; and besides my electrical home-made apparatus, I exhibited a home-made gyroscope. I have already made allusion to the "gyro compass" that was for several years under the care of my nephew, Mr. Homer Root. Now you can realize from the above what a thrill it gives an old man to find out, after years have gone by, that he was a co-worker and had a hand in ushering in to humanity some of the great and wonderful inventions of the age! If that be true, how much more is it true of the one who has spent a lifetime in holding up to a suffering world the glorious victories that are possible as a result of spreading the "glad tidings" of the gospel to a sin-sick and suffering world?

"WHOSOEVER SHALL GIVE YOU A CUP OF WATER."

Mr. A. I. Root:—Thy favor and package of "War on Christian Principles" was gladly received, for our heavenly Father lets me "live by the side of the road and be a friend to man." People stop for a drink when they see our pump has a cup, and sometimes water their horse; and even automobiles have to have water too, and I am always glad to give folks something to read that will do them good—so many opportunities I find to distribute "How to be Happy when People Abuse You," too.

I gave two of our soldier boys a copy of just one of the Evangelists, Matthew and Luke, and we hear that one claims to have taken a firm stand as a Christian since going to camp, and he writes he knows of but one Bible in the camp, so he prizes his booklet.

The liquor interests have named their present effort "here-a-way" (Home) Rule. They have organized what they call Home Rule League for Michigan against statewide prohibition. "The Lord can provide in his own time and way." He does hear and answer prayer.

Later (*Aug. 11*).—I am almost out of "How to be Happy," etc. I think it certainly will be a real peacemaker in small villages where they have "eruptions" in their "aid societies." Oh! *why* do they? What is wanted is more spiritual power. Will more machinery and more hurrah get it?

Not ever more within that hive.

RHODA C. W. DERBYSHIRE.

Ypsilanti, Mich., Aug. 11.

My good friend, you have given me an idea that I never had before—that is, a drinking-place "by the side of the road." as an opportunity or a medium for the distribution of tracts. Thruout a large part of Michigan, and especially where there is sandy soil, the water is beautifully clear, soft, and pure, as a rule; and drinking-places for both man and beast are quite common by the side of the road. Your quotation from Sam Walter Foss about living "by the side of the road, and being a friend to man," comes in very nicely. And when the saloons are done away with, may God help us to realize the importance of having good pure water, easy of access *everywhere*, nor only for horses and men, but for automobiles also, as you suggest.

Your mention of aid societies makes me think of Pollyana and her "ladies' aid" as she called it.

HIGH-PRESSURE GARDENING

Whatsoever a man soweth (or planteth), that shall he also reap (or dig).—GAL. 6:7.

He that soweth to his flesh, shall * * * reap corruption.—GAL. 6:8.

OUR FLORIDA GARDEN.

We are just now almost at the close of 1916, having most beautiful growing weather, altho we had quite a smart frost about the middle of the month. However (much to our surprise), it did almost no damage on our grounds. Today, Dec. 28, the temperature is close to 80, the wind in the south, and the little summer shower in the night makes everything most beautiful this morning.

For nearly 75 years I have been curious as to *how* plants grow. Do they grow by jumps and jerks, or just gradually? This morning for the first time I have *nearly* "caught them at it." Some radish seed had been sown in a cold-frame, and it was time for them to come up. At 8 A.M. the crust over the seeds was unbroken. An hour later it was heaved up and cracked open, showing it had moved upward a quarter or nearly half an inch. Did it come up gradually, or all at once? Well, I am not quite satisfied; but my impression is, the growing plant kept pushing and gathering strength until the soil above gave way, and then the ground may have lifted up *almost* at once.[*]

Do you ask why one wants a hot-bed or cold-frame down in Florida? Well, we had a couple of weeks in November and December when a cold-frame with *glass* to cover was a big help. Listen! I wanted sprouted potatoes to plant at the very earliest possible moment. I spread them out in the sun, covered them with wet sacks, etc., but nothing worked like the glass-covered bed. We had terribly cold north winds about the time of the zero weather in the North. By managing the sashes we got the ground inside warmed up, and by blanketing at night we *kept* it warm; and when it came fit weather to plant outside we had "potato sets" with not only green leaves but with a mass of roots, some of them bigger than your hand. The small space inside the frame was made very rich with poultry droppings and fertilizer, and each piece of potato with its mass of roots carried a lot of rich soil with it, so the potatoes were really "up and growing" *the very day they were planted.* Now, here is a lesson for the good people up north while potatoes are close to a dollar a peck. Use hot-beds, cold-frames, or greenhouses in the way I have indicated; and when the weather and soil are ready for potatoes outdoors you can have you crop almost half grown.

Here is another advantage: I just paid $7.00 for a sack of 10 pecks of Maine-grown Red Triumphs for seed. Some of these were quite large. We spread them all out in the cold-frame and covered them with an inch or more of rich sifted soil. In a little time the big potatoes with the rest sent up great strong sprouts, sometimes only one sprout from the end. This sprout, with a portion of the potato with it, was cut out and planted, while the rest of the large potato was put back. In a little time the other eyes formed good sprouts also, and in this way we secured from one large potato a good strong sprout from almost every eye; and it was not only a "sprout" but a potato-*plant* with leaves and roots. I have some potato-beds where one row was set with *potato-plants,* and the rest of the bed was planted with seed potatoes in the usual way. These beds are a great astonishment to visitors. Years ago, as some of you may remember, in a manner similar to the above, I increased one single potato to a *whole barrel* in a single year. This potato was "Maule's Early Thorobred." When my report came out in GLEANINGS, Everitt, the Indianapolis seedsman, copied it in his catalog as a description of a new potato *he* had just brought out.* Of course I made a vigorous protest and referred the whole matter to Maule. Everitt's excuse was that his potato came from the same source as Maule's. and really was the same thing. As my neighbor T. B. Terry had on his grounds the Thorobred from the beginning, I knew this could not be true. It was in one sense a cool piece of *forgery;* but Maule advised letting it drop, as it would make a legal tangle, probably, to take it up. Why do I go back to it here? Because the *Rural New-Yorker* of Dec. 23 contains the following:

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[*] A chick in an incubator may pip the shell and then do nothing more for 24 or even 48 *hours*; but all this time it is growing and gathering strength for the final grand climax, when it bursts its brittle shackles and kicks its way out into the new world. Is it not, to some extent at least, the way with plants?

SENTENCED TO PRISON.

James A. Everitt, 68 years old, Indianapolis, using the mails to defraud, eighteen months in Atlanta prison.

The above few lines tell in the fewest words possible the culmination of a life record of deception, hypocrisy, and dishonesty practiced by a man having every opportunity to achieve wealth by honorable means.

"Whatsoever a man soweth, that also (in time) shall he reap."

THE DASHEEN; MORE ABOUT IT.

The tubers are now on sale in our groceries here (in Bradentown) at about half the price of Irish potatoes. We clip the following from *The Jacksonville Times-Union*:

The agricultural branch of the federal government has been endeavoring for several years to make a new article of food popular. It is a vegetable which is eaten today by a larger proportion of the world's inhabitants than any other, comparing with rice among the cereals in that regard. Moreover, it has been an article of food in the tropics since time immemorial under different names, but has been brought to the attention of the American public only in recent years. It is probably unknown in Europe, except among those who have traveled in the tropics.

The dasheen, we learn, is now actually in demand to a limited extent, and that demand is growing. The limited commercial demand bids fair soon to outstrip the supply, and its cultivation along the gulf region and as far north as central Georgia and Alabama will soon be profitable. It is a crop particularly adapted to Florida, one yielding 300 to 400 bushels per acre under ordinary conditions, sometimes between 500 and 600 bushels. It is an esculent that has won favor wherever introduced.

Its corm, the principal part eaten, is superior to the potato, which it resembles in some degree. To the flavor of the potato it adds that of the chestnut. It contains 50 per cent more protein than the potato, and considerably more starch. It is far more digestible than the potato, and for that reason is the favorite food for convalescents in the countries where it is a staple article of diet. This superiority of digestibility is said to be due to the smaller size of its starch grains which are to those of the potato, according to one comparison, "as a pebble to a cobblestone." Those who have eaten the young shoots, when blanched, pronounce them exceeding those of the asparagus for delicacy of flavor.

Something resembling potato chips is made by slicing very thin the corm, sometimes erroneously termed the "root," and cooking the slices as potato chips are made, and this is a favorite delicacy among children where it has been introduced, we are told, on account of the nutty flavor.

We direct particular attention to this crop and the growing success of the government in introducing it to public attention because of the adaptability of its culture to Florida conditions. Florida farmers make large sums thru supplying the markets of the country with the earliest new potatoes in the spring. A vegetable maturing late in the fall, and which produces so abundantly, would admirably supplement the early spring potato crop. The belt in this country thruout which it can be successfully cultivated is quite narrow, but includes all of Florida. As a means of adding to the resources of Florida truck-growers and the wealth of the state the dasheen is of great promise.

I clip the following from the *Florida Times-Union*:

But few dasheens have been dug here so far. J. J. Schmidt has a two-acre field, from which he estimates that the yield will be four hundred bushels. He has been digging them for several weeks and is finding a local market for them as fast as he cares to dig them, and he thinks he will be able to dispose of the entire crop locally. The exceedingly high price of potatoes this year, together with the high price of wheat and flour, it is thought, will be a big factor in introducing the dasheen to more general use. If dasheens are put on the market at a slightly lower price than potatoes, or even at the same price with them, it is thought that many people will buy them in preference to potatoes; and, after an introduction, it is thought dasheens will be able to hold their own in competition with potatoes.

Dasheens, being a crop that will keep almost perfectly in the ground until their growing season in the spring, are one product which the grower does not have to rush to market or even rush to harvest, and the prices, once established, are likely, therefore, to remain quite stable.

Let me repeat that I have dug a heaping half bushel from a single hill that had been growing right along *for two years.* The tops (also edible) would have made another half bushel or more.

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* He used my words and my name without authority or even knowledge on my part, to boom a potato I had never even heard of.

POTATOES AND STRAWBERRIES.

If any reader of GLEANINGS grows the Wall's Orange potato (a variety introduced some 30 years ago) I shall be indeed grateful if he will write me. I am very anxious to get a little of the seed. I have long tried to find it, but all in vain—so I appeal to you. By the way, I had a few ripe strawberries today, picked in the open garden (Dec. 8). Who can beat that? There are many green berries on the vines, and considerable bloom. Surely there never was another such strawberry as the *Progressive Everbearing*.

On Oct. 15, on a single spring-set plant I picked 40 nice ripe berries; counted 69 green ones and lots of bloom. Hundreds more were about as good. All these plants had been bearing abundantly ever since July.

Success to you and the new GLEANINGS.

Hyde Park, N. Y., Dec. 8. A. T. COOK.

A FLORIDA BEEKEEPERS' MEETING HELD SEMI-MONTHLY.

We clip the following from the Manatee River *Journal*:

YANKEE BEEMEN AND CRACKERS MEET AND TALK THINGS OVER.

The beekeepers of the North, on the approach of cold weather, swarmed out and took a beeline for Bradentown for more congenial climate and lit on the front porch of J. J. Wilder's residence in the western part of Bradentown.

This swarm from the North met quite a number of local beekeepers; but as they did not come to rob them of their store of honey no disturbance was made. Some delay was caused by the late arrival of some of the beekeepers; but Kingbee Daniel Johnson finally succeeded in getting them all hived and proceeded with the program.

The purpose of this meeting was to get the ideas of different beekeepers in this vicinity as to the best methods to be used in conducting an apiary. These meetings will be held once every two weeks, on Friday afternoon, until the Northern beekeepers take their flight at the end of the season.

Next in order was a paper by Mr. Rees, entitled "Beekeeping in Manatee County, Compared with California and Texas." Mr. Rees held to the view that this section is superior on account of the freedom from diseases, but admits that the dragon-fly is troublesome near swamps.

Mr. A. I. Root, the veteran beekeeper of 70 years' experience, gave an excellent talk on his early experience in starting in the business; how he received nothing but ridicule from his friends when he paid twenty dollars for an Italian queen; but when the colony that she raised produced a barrel of honey in one season (not a barrel of money), the laugh was on the other side. His sons and sons-in-law have built up a business that is the largest in the world in bee supplies, and handles more honey than any other firm. Mr. Root is also an expert gardener, and has in one year raised a barrel of potatoes from one seed potato. His gardening methods might be employed now to a great advantage, potatoes are so high.

Mr. J. J. Wilder, who did not have to fly so far—only from Cordele, Ga.—gave his method of marketing, and preferred to sell to jobbers. His apiaries in Georgia produced 144 tons of honey and sold one man six carloads of his product.

I don't know of another town that has so many heavy-weight beekeepers as Bradentown now has. It must be that it possesses superior attractions.

Daniel Johnson, of Cazenovia, N. Y., who was chairman of the meeting, is a beekeeper of wide experience—also a very successful queen-raiser and potato-grower.

Edward Reddout, of Lysander, N. Y., was present, and had a paper on honey production and queen-raising combined, claiming that it could be successfully done. Ed is like Dan—raises queens for other people, but has none in his own apiary. Ed is building a hive.

Your correspondent was around among them and never got stung, but may not fare so well after this article is published.

Bradentown, Fla. W. N. REDDOUT.

The above report is from Mr. Edward Reddout's father; and the father's remark about a queen-breeder who has no "queen" in his own apiary probably refers to the fact that the son is as yet unmarried, altho he is now building a "hive."

GOATS AND GOATS' MILK, ONCE MORE.

Dear Brother Root:—Thanks for publishing my communication regarding milch goats, p. 1138, Oct. 15. I guess I "have started something" all right. It has brought letters of inquiry about milch goats from all quarters of the United States, and still they come. Every inquirer so far has been thoughtful enough to inclose a stamp. That is a little unusual. I consider I am doing some substantial missionary work in getting any one interested in milch goats, especially where the aged, invalids, or infants are concerned.

As to the "smell," this comes from the male. He should not be kept with the does giving milk. The does and kids are far cleaner than the cleanest dog or cat, and there is no comparison with a cow. I pet and rub my goats, and the kids climb all over me and nose all my pockets to see if perchance I have a pear concealed about me; and no one could tell I had been about the goats from any odor I carry from them. The "uncouth-looking" ill-smelling goats you refer to were "woolloomooloos," or just goats, and no doubt the males ran with the flock. Even some of those does make fair milkers, and are odorless if kept away from the males. As to their looks, my goats are just grades; but their white coats, clean appearance (no grease as with sheep), deer-like build, and gazelle-like actions attract the attention of all passers. Every one admires them. All I have claimed, and much more, is true of goats and their milk. Cheese? Sure! Some of the best and most expensive cheese are made from goats' milk. It is easily made too. If you encourage a discussion of goats and their products I am sure every aged person, invalid or mother, who is induced to use goats' milk, and especially for infants, will rise up and call you "blessed." It is the only real substitute for mothers' milk—the most nourishing and most easily digested food for the aged and for invalids.

The big goat you saw in Michigan was, no doubt, a Nubian—a large breed, good milkers, but very expensive; said to be short-lived, and not to stand the cold well.

Some goats have horns and some have none. Some of mine are hornless. I think they are a Saanen cross on Spanish-Maltese on common goats. Milk goats are not so plentiful that they are easily obtained, and pure breeds are prohibitive in price. The practical way is to obtain common goats—the best milkers you can get, and breed up. It is not so hard nor expensive to get pretty good males.

If you could see a bunch of my kids, about two months old, at play, then see them mob me at feeding-time, and see how very smart they are, and how nearly they can talk, you would agree with me that they are the dearest, cleanest, most enjoyable of pets, and anything but uncouth-looking. Then just think of the "milk and honey." The milk is twice as good as cows' milk, at one-eighth of the cost, and is absolutely free from tuberculosis.

Those interested might send 15 cents to the B. A. I., of the Dept. of Agriculture, Washington, D. C., asking for Milch-Goat Bulletin No. 68. It is not up to date, but is a valuable treatise.

I have nothing for sale.

Rev. Alson W. Steers.

Nooksack, Wash., Nov. 19.

SOME ADDITIONAL INFORMATION ABOUT GOATS AND GOATS' MILK.

I note in High-Pressure Gardening for Nov. 15 a reference to goats' milk and goat periodicals. As an interested goat-owner I would refer you to the *Goat World*, published at Baldwin Park, California.

There is, undoubtedly, a growing interest in milch goats, and fairly steady demand. A good medium-grade goat may be bought in this market from $13.00 to $25.00. Pure-bred Toggenburg does bring as high as $300.

Personally I cannot favor the tieing up of so much money in any one animal unless it is for the purpose of breeding pure-bred stock.

Merely for the pleasure of having a pet around I have bought several grade goats when they were dry and sold them after they had their kids.

The last one I bought was a three-quarter Saanen (the Saanen breed, by the way, is the equal of the Toggenburg as a milk-producer, and in my opinion are much more hardy). She had three kids; and when I sold her after selling the kids she was giving over two quarts of milk a day. I have recently bought a goat which the owner says gave four quarts. She appears to show Nubian blood. Certainly if one can obtain a goat which will give four quarts of milk a day a price of $25.00 is not excessive.

The milk generally sells for 25 cts. a quart, and always has a ready sale. At the Panama Pacific International Exposition Toggenburg goats were exhibited which gave as high as six quarts of milk a day.

Altho it is hard to buy pure-bred stock at reasonable prices, nevertheless it is important that no Angora blood be present, as this seems to militate against a good milk production.

The Department of Agriculture, Washington, publishes several good pamphlets on milk goats, ranging from 5 to 15 cts. apiece.

I keep my goats staked out during the day time, and then bring them into the chicken-yard at night.

Neither the goats nor chickens have been injured by their proximity.

I can imagine no pleasanter or more delightful combination than goats, chickens, bees, and fruit with a few vegetables on the side. There will nearly always be something to do, and plenty of life around the house, especially if you have a few children of your own.

I should like to emphasize the fact that there is positively no odor nor taste to goats' milk, providing the buck is not allowed to be around the barn. The milk is white, rich, and the fat is evenly divided, no cream arising on standing.

Sherman Kimball.

San Francisco, Cal., Nov. 27.

GOATS' MILK AND GOAT PERIODICALS.

You ask about papers on milk goats. The best is the *Goat World*, Baldwin Park, Cal.; monthly, $1.00. Los Angeles, Cal., is the great milk-goat center. The milk retails in the city at 25 cents a quart, and it is the life of a baby, sure. A. I. Root will do more good with milk goats than he has with bees, poultry, or "sermons," I predict.

You want to know if goats' will hurt chickens. I should say not, Mr. Root. In far-off Switzerland doe goats are trained to come when the baby cries, and let the baby nurse direct from the goat. Now, an animal that is so gentle and careful as to walk over a baby, and not injure it, surely would not hurt chickens.

If you pasture a nanny, see that there is a good wire fence around the pasture. The bucks smell bad; but it is claimed that the Anglo-Nubian bucks do not smell at all. If you buy a buck, always keep at least one eye on him, for Mr. Buck is a sort of living battering-ram—something like those they used to employ to batter down the walls of a city.

C. A. Neal.

Jonesboro, Ind., Nov. 23.

Several copies have been sent me of *The American Standard Milk-Goat Keeper* (Lynn, Mass.), and from them I learn that milk goats cost all the way from $12 or $15 up to $25, or even $50 for fancy stock.

Mr. A. I. Root:—A subscriber of ours has mailed us a clipping from Gleanings in Bee Culture for Nov. 15, containing a letter from Chas. Blake, and your answer under the heading "Goats, Goats' Milk, and Goat Periodicals."

Your question as to whether the goats and chickens would agree was answered by one of our writers in our July number, which we are mailing you. We agree with the article, providing the chickens are absolutely free from lice. Chicken lice will stay on goats and soon kill them if not looked after.

E. F. Dwyer,
Editor of Am. S. M. G. Keeper.

Lynn, Mass., Dec. 2.

ALFALFA HONEY INSTEAD OF ALFALFA HAY AS A CURE FOR THE BLUES.

I presume our readers have seen statements in regard to good wholesome nourishing bread made from alfalfa. So far as I can learn, this bread was made from alfalfa *leaves*. If I mistake not, the *Rural New-Yorker* said recently the whole thing was simply a yarn about making *bread* from alfalfa *hay*. As most beekeepers are interested more or less in alfalfa for *both* hay and honey we give the following:

Mr. A. I. Root:— Knowing that you are interested in new discoveries I enclose a clipping from the Mobile *Register* of July 3, which is self-explanatory.

Referring again to the enclosed clipping, it might be well for you to write Dr. Alexander L. Blackwood, of Chicago, that he should be advocating alfalfa *honey* instead of alfalfa hay.

L. H. Shranger.

Here is the clipping referred to:

SAYS ALFALFA IS CURE FOR BLUES; INDIGESTION AND MENTAL DEPRESSION VANISH BEFORE HAY.

Chicago, July 2.—Members of the American Institute of Homeopathy concluded their annual convention here today and adjourned.

Alfalfa as a remedy for indigestion and mental depression was recommended by Dr. Alexander L. Blackwood, of Chicago. He told of experiments made with the new remedy at a Chicago hospital.

"During the past year observations were made of the action of alfalfa on seventeen persons," he said. "All of them noted that they grew so hungry that they could scarcely wait for their meals. Their minds were clear and bright, all bodily functions were stimulated, and it was impossible to have the blues."

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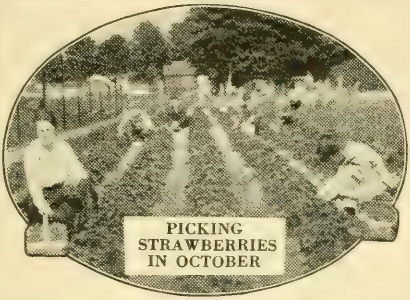
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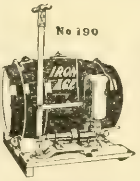

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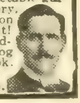

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Is to own a few acres of land," says Jacob Biggle in his characteristically interesting article in the February issue of The Farm Journal. Some other worth while remarks, too—about the age-old question of "Land for the landless" and our first President who was also a farmer. Read this article! Subscribe to The Farm Journal! The boiled-down, all-cream, chaffless farm paper. Makes life easier for Farm Folks. Goes into nearly 1,000,000 farm and village homes. Appeals to *every* member of the family. Only $1 for 5 years. Money back any time. Send for free copy February issue and free copy of 1917 Poor Richard Almanac.

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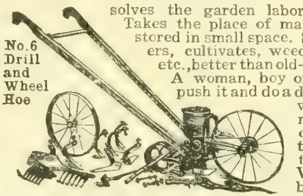

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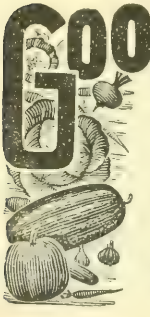

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Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.

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A MARYLAND BEE-MAN

Continued from page 104.

sidered it practical to move colonies to a very favorable location temporarily for a certain flow, then elsewhere for another flow and then back home the same season, he answered that he had never tried it, but was accustomed to moving a large number of colonies in changing the location, and sees no difficulty whatever in the moving part of it.

FEELS NEED OF AN AUTO TRUCK.

Mr. James has had a horse since his second year on the new place, but I can see that he will be ready to buy an auto before many seasons have passed, to take him and his supplies back and forth. Such time-saving methods will enable him to extend his operations.

IS PRESIDENT OF THE STATE BEEKEEPERS' ASSOCIATION.

He has been president of the Maryland Beekeepers' Association off and on for a number of years, and was again elected to the position last November. He is a member of the Methodist Church, teaches the men's Bible class, and has superintended the Sunday-school His farm, located on a high ridge near Hyde's Station, Md., and bordering Long Green Valley, has an elevation of 600 feet above sea-level.

I shall surely visit Mr. James again next swarming time, if possible.

Baltimore, Maryland.

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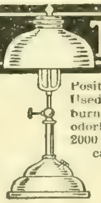

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Sow a few acres this season. Your land needs it. Great for worn-out farms. Rich in humus and nitrogen producing qualities. Inoculates land for alfalfa perfectly. Buy it of us. Get our free catalog of Garden and Field Seeds. Address

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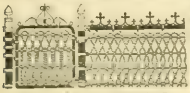
Dept. G-107 Lincoln, Neb.

FREE BOOK
LINCOLN BRAND SEEDS



ORNAMENTAL FENCE

Attractive, Strong, Durable, all steel, for Lawns, Churches or Cemeteries. Costs less than wood. **DIRECT TO YOU at Manufacturers Prices.** Catalogue Free. Write today.

KITSELMAN BROTHERS, Box 403 MUNCIE, INDIANA.

WHITE SWEET CLOVER $3.90 Per Bu.

BIGGEST MONEY-MAKER KNOWN—INVESTIGATE

The greatest forage plant that grows. Superior to all as a fertilizer. Equal to Alfalfa for hay. Excels for pasture. Builds up worn-out soil quickly and produces immense crops, worth from $50 to $125 per acre. Easy to start, grows everywhere, on all soils. Write today for our Big 100-page free catalog and circular about unhulled and scarified hulled sweet clover. We can save you money on best tested, guaranteed seed. Sample Free.

A. A. BERRY SEED CO., BOX 966, CLARINDA, IOWA

Cultivate Horseradish

Increasing Demand . . . Large Profits
100 Root Sets with Full Information, $1.00
CULTIVATION OF WILD FRUITS
Will interest and surprise you.
FRUIT TREES, SHRUBS, ROSES
Superior Quality. Popular Prices
OLEOMARGERINE, 10 Cents per Pound
The best, easily made in your own home.
BETTER LIVING REDUCED COST
Send Postal for Information
VALLEY FARM CO., NEWBURGH, N. Y.

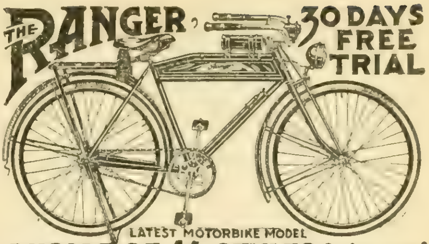
Paint Without Oil

Remarkable Discovery that Cuts Down the Cost of Paint Seventy-Five Per Cent

A Free Trial Package is Mailed to Everyone Who Writes

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire-proof, sanitary, and durable for outside or inside painting. It is the cement principle applied to paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 11 North Street, Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.



CHOICE OF 44 STYLES Colors and Sizes in the famous line of *"Ranger"* Bicycles. There are eighty three (83) others, also, shown at ***factory prices*** from **$14.75, $15.75, $17.75,** up. There is a ***Mead*** Bicycle for **every** rider, at a price made possible only by our *Factory-Direct-to-Rider* sales plan.

MARVELOUS OFFER — **30 days** — one month's free trial on this finest of bicycles—the **"Ranger."** We will ship it to you on approval, *express prepaid*—without a cent deposit in advance. This offer *absolutely genuine.*

WRITE TODAY for our big catalog showing our full line of bicycles for men and women, boys and girls at *prices never before equaled* for like quality. It is a cyclopedia on bicycles, sundries and useful bicycle information. **It's free.**

TIRES, COASTER-BRAKE, rear wheels, inner tubes, lamps, cyclometers, equipment and parts for all bicycles **at half usual prices.** A few good second-hand bicycles taken in trade to be closed out, **$3** to **$8** each.

RIDER AGENTS wanted in every locality to ride and exhibit a sample 1917 model **Ranger** furnished by us. **Do not buy** a bicycle, tires or sundries until you get our catalog and new special offers. **Write today.**

MEAD CYCLE CO., Dept. A 153, CHICAGO, ILL.

4 MONTHS FOR 10c
Trial Subscription To Fruit and Garden Paper

Tells about planting, pruning, spraying and selling fruit and garden truck.

Ask Us Your Hard Questions,

We conduct this department for the special benefit of our subscribers. Experts answer all questions by mail and through the columns of the magazine.

Fruitman and Gardener. 106 Main St. Mt. Vernon, Ia.

450,000 TREES

200 varieties. Also Grapes, Small Fruits, etc. Best rooted stock. Genuine, cheap. 2 sample currants mailed for 10c. Catalog free. **LEWIS ROESCH, Box H, Fredonia, N. Y.**

Money In *Your* Ideas

C & C PATENTS PROTECT THEM FOR YOU

Books **"What to Invent"** and **"How to Obtain a Patent"** sent free. Send rough sketch for **free** report regarding patentability. **A C & C** patent on your idea today may mean independence tomorrow. Manufacturers constantly writing us to buy patents. Patents advertised for sale at our expense.

CHANDLEE & CHANDLEE, Patent Attorneys
Est. 21 Years. 1124 F Street, Washington, D. C.

Five-Pass., 30 H. P.
32x3½ tires
Electric Starting
114-in. Wheelbase

Driver Agents Wanted

Ride in a Bush Car. Pay for it out of your commissions on sales, my agents are making money. Shipments are prompt. Bush Cars guaranteed or money back.

Write at once for my 48-page catalog and all particulars. Address J. H. Bush. Pres. Dept. 2LP

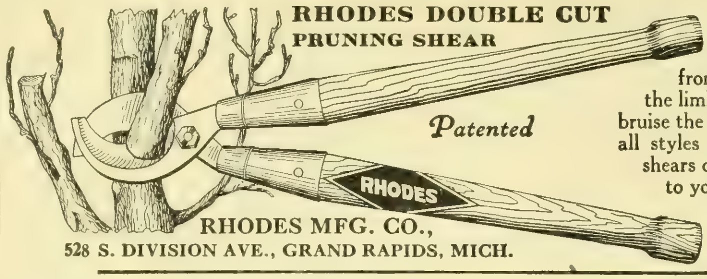
BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

Spray Your Crops

KANT-KLOG SPRAYER

9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. *Send for catalog.* Agents wanted.

Rochester Spray Pump Co.
207 Broadway Rochester, N. Y.

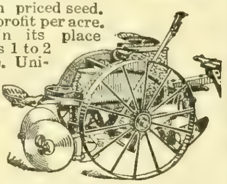


RHODES DOUBLE CUT PRUNING SHEAR

Patented

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door. Write for circular and prices.

RHODES MFG. CO.,
528 S. DIVISION AVE., GRAND RAPIDS, MICH.



IRON AGE

Farm, Garden and Orchard Tools

Answer the farmers' big questions, How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

IRON AGE Potato Planter

solves the labor problem and makes the best use of high priced seed. Means $5 to $50 extra profit per acre. Every seed piece in its place and only one. Saves 1 to 2 bushels seed per acre. Uniform depth; even spacing. We make a full line of potato machinery. Send for booklet today.

No Misses
No Doubles

Bateman M'f'g Co., Box 20B, Grenloch, N.J.

"Best" Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. **Agents wanted. Big Profits. Write for Catalog.** THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

3 Garden Tools in 1

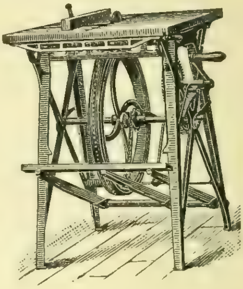
The BARKER Weeder, Mulcher and Cultivator

The only garden tool that successfully, in one operation, *kills weeds*, and forms a complete *soil mulch* to hold moisture. "Best Weed Killer Ever Used." A boy with a Barker beats ten men with hoes. Has shovels for deeper cultivation. Self adjusting. Costs little. *Write for illustrated folder and special Factory-to-User offer.*

SEE THE KNIVES

Barker Mfg. Co.
Box 117 David City, Nebr.

Personal MAGNETISM will help you build a successful business. Particulars free. Liberty Co., Sta. D, Box 4M, Cleveland, O.



BARNES'
Hand and Foot Power Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices. Address

W. F. & JOHN BARNES CO.
545 Ruby St.
ROCKFORD, ILLINOIS

Raw Furs My graders' guide and price list are FREE.

Furs held separate on request. Rug and robe making a specialty. No commission or express to pay when you ship to

GEO. E. KRAMER, Valencia, Pa.
Mention "Gleanings"

LOS ANGELES HONEY CO.
633 Central Bldg. . . . Los Angeles, Cal.

Buyers and Sellers of Honey and Wax

Write us for Prices when in the Market

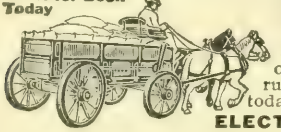
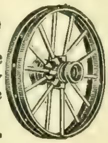
When Ordering Supplies

remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk. Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager

850,000 GRAPE-VINES

69 varieties. Also Small Fruits, Trees, etc. Best rooted stock. Genuine, cheap. 2 sample vines mailed for 10c. Descriptive catalog free. LEWIS ROESCH, Box H, Fredonia. N. Y.

Write for Book Today

FARM WAGONS

High or low wheels—steel or wood—wide or narrow tires. Steel or wood wheels to fit any running gear. Wagon parts of all kinds. Write today for free catalog illustrated in colors.

ELECTRIC WHEEL CO., 23 Elm Street, Quincy, Ill.

WHAT'S THE REASON?

Continued from page 114.

office, and the sales are made here. The amount of advertising done does not appear in the report.

The crops harvested in Switzerland seem very meager, and I doubt whether we would keep many bees in America if we did not obtain much higher yields. As a business, apiculture would be all out of the question here under such conditions. In Switzerland the individual apiaries consist of not over ten colonies each on an average. The beekeeper does not depend on his bees for his subsistence, keeping them more for pleasure than for profit.

Naples, N. Y., Jan. 2.

Eastern Beekeepers

Write us when in need of bee hives, sections, foundation, or anything in the supply line Discount on early orders.

If you are planning on keeping more bees, we can furnish you with full colonies, nuclei, or bees by the pound at reasonable prices, as we have 700 colonies in our several yards.

One-pound flint-glass honey-jars, burnished top, $5.00 a gross. Catalog mailed upon request.

A bargain: 3000 sections 3⅝ x 5 x 1½ slightly soiled at $2.50 per 1000.

I. J. STRINGHAM
105 Park Place, New York City
Apiary: Glen Cove, L. I.

QUEENS AND BEES

Southern bred under natural conditions. Three-banded Italians. We are breeding from the best selected from eleven yards. Bees gathering pollen Jan. 1st. Prices March to June:

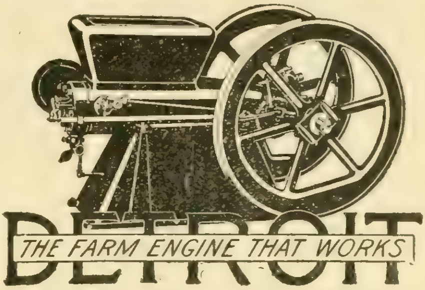
	1	6	12	50
Untested	$1.00	$ 5.50	$10.00	$ 38.00
Tested	1.25	6.50	12.00	45.00
Select tested	2.00	10.00	18.00	65.00
1 lb. Bees	1.50	8.50	16.00	65.00
2 lb. Bees	2.50	15.00	29.50	115.00

Breeders fair..$5.00 Extra select..$10.00

Orders booked now. Shipments begin in March. Ten per cent discount on all orders received 30 days before shipment is to be made. Safe arrival guaranteed on bees 6 days of Calallen. Let us know your wants. Reference The Guaranty State Bank, Robstown, Texas.

Nueces Valley Apiaries, Calallen, Texas

64 BREEDS Valuable New Poultry Book Free—108 pages. Fine pure-bred chickens, ducks, geese and turkeys. Choice, hardy, Northern raised. Fowls, eggs and incubators at low prices. America's greatest poultry farm. 24th year in business. Write today for Free Book.
R. F. NEUBERT CO., Box 837, Mankato, Minn.

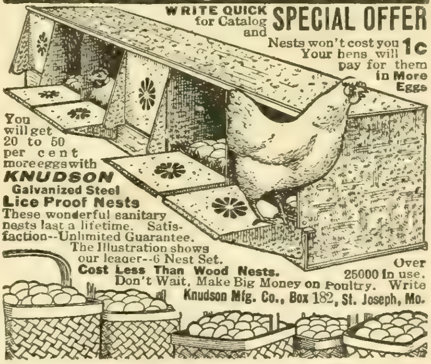


Gasoline and Kerosene

DETROIT
THE FARM ENGINE THAT WORKS

Built and guaranteed by the largest producers of farm engines—simple, durable, powerful—four cycle, suction feed, make and break ignition—every part interchangeable—fully tested. Guaranteed to Develop Rated H. P.

SAVES FUEL, TIME, LABOR, MONEY
Lowest Price, Greatest Value
Write for big illustrated Engine Book today
Full Line Detroit Engines 2 horsepower up
DETROIT ENGINE WORKS 373 Bellevue Ave., DETROIT, MICH.
Wadsworth Mfg. Co., Successors



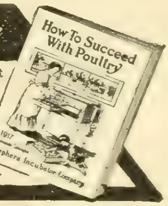
Lice-Proof Nests

WRITE QUICK for Catalog and SPECIAL OFFER

Nests won't cost you 1c Your hens will pay for them in More Eggs

You will get 20 to 50 per cent more eggs with **KNUDSON** Galvanized Steel **Lice Proof Nests** These wonderful sanitary nests last a lifetime. Satisfaction--Unlimited Guarantee.

The Illustration shows our leader--6 Nest Set. **Cost Less Than Wood Nests.** Over 25000 in use. Don't Wait, Make Big Money on Poultry. Write **Knudson Mfg. Co., Box 182, St. Joseph, Mo.**



Chicken Money

1917 is going to be the biggest year known for poultry raisers. Start right—Get the Cyphers Book—A mine of information which shows the way. Write for free copy.
Cyphers Incubator Co.
Dept. 69 Buffalo, N. Y.

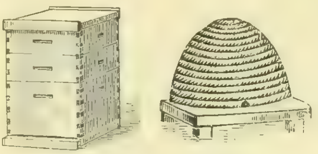
Poultry Book Latest and best yet; 144 pages, 215 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 53 pure-bred varieties. Tells how to choose fowls, eggs, incubators, sprouters. This book worth dollars mailed for 10 cents.
Berry's Poultry Farm, Box 97, Clarinda, Iowa

62 BREEDS, Pure-bred Chickens, Ducks, Geese, Turkeys. Hardy, northern raised. vigorous, beautiful. Fowls. eggs, inbators, at low prices. America's Pioneer Poultry Farm; 23 years' experience. Large fine Annual Poultry Book and Catalog FREE.
F. A. NEUBERT, Box 693. Mankato, Minn.

100 Everbearing Strawberries Plants $1.40 Post Paid

Progressive, Americus or Superb. We introduced progressive. Say which. 25 Everbearing Red Ras. 70 cts. postpaid. Catalog Free all about the New Everbearers and other important varieties.

C. N. FLANSBURGH & SON, Jackson, Mich.



Forehand's QUEENS

Which Colony is Yours, Mr. Beekeeper?

How many of you were disappointed last season when you harvested your honey crop? You can make every colony a good one. WHY NOT? Just head it with a young vigorous three-band Italian queen. She will cost you only 75c, just 3 lbs. of honey. YOU can easily make a gain of 6 lbs. over the inferior colony which is a net gain of $3.75. Good pay for introducing one queen, not considering the increased value of the colony.

Spring will soon be here, the time to requeen that colony with the bad queen. CAN you spend your time more profitably now than deciding what stock, and where to purchase your early queens? Give us a trial. We breed only the pure three-band queens. All of our yards are the purest that can be bred. So you take no risk in getting a hybrid from us.

Four reasons why you should use our queens: 1st—They are first-class honey-gatherers. 2d—They are the most vigorous, and highly resistant to foul brood. 3d—The Imported bees (which ours were reared from) are the gentlest bees known. 4th—The most modern and learned beemen in the world today (the Roots) use the three-bands. WHY? Because they are best.

We have had 25 years of experience, in rearing queens, having started with Doolittle, and such men. We have 1000 nuclei, which makes it possible for us to fill orders promptly. Three expert queen-breeders have charge of nuclei. So we do not overwork, which gives us ample time to improve our stock. None but first-class queens are mailed. We give a first-quality queen at a medium price, and guarantee perfect satisfaction and safe delivery.

Untested	One,	$ .75	Six,	$ 4.25	Twelve,	$ 8.00
Selected untested	One,	1.00	Six,	4.75	Twelve,	9.00
Tested	One,	1.50	Six,	8.75	Twelve,	17.00
Selected tested	One,	2.00	Six,	11.00	Twelve,	20.00

Write for circular giving general description. Mail all orders to

W. J. FOREHAND & SONS, Fort Deposit, Alabama

For Sale --- 10,000 lbs. of Bees in Packages --- Spring Delivery

20 YEARS OF SELECT BREEDING GIVES US BEES OF THE HIGHEST QUALITY
BEES FOR HONEY PRODUCTION...............BEES OF UNUSUAL VITALITY

As we are large honey producers as well as queen breeders, producing from one to two cars of honey annually, we have ample opportunity to test out all breeding stock used in our queen yards. Thus we are able to guarantee our bees to give absolute satisfaction. If you want bees that are gentle, great honey getters as well as **Very Resistant to European Foul Brood**, let us book your order. **Safe arrival guaranteed.**

Swarms of Bees Without Queens April First Delivery

1-lb. packages, $1.25 each;	25 to 50, $1.22½ each;	50 to 100 and up, $1.20 each
2-lb. packages, 2.25 each;	25 to 50, 2.22½ each;	50 to 100 and up, 2.20 each
3-lb. packages, 3.25 each;	25 to 50, 3.22½ each;	50 to 100 and up, 3.20 each

Golden and 3-Band Italian Queens April First Delivery

Untested ......75 cts. each, $65.00 per 100	Tested .....$1.25 each, $110 per 100
Select Untested 90 cts. each, 75.00 per 100	Select Tested 1.50 each, 125 per 100

Queens' wings clipped free of charge.
Write for descriptive price list. Let us book your order now.
Only a small deposit down required.

LARGEST AND MOST SUCCESSFUL SHIPPERS OF BEES IN PACKAGES

M. C. BERRY & COMPANY, Hayneville, Alabama, U. S. A.

Five finest roses $1
Delivered to your Home. . . .
Sturdy bushes of finest varieties
guaranteed to grow
Get our Free Fruit & Floral Guide illustrating these roses in color containing unusual helpful collections of fruit, flowers, shrubs and evergreens for your garden.

ARTHUR J. COLLINS & SON
Box 42 Moorestown, N. J.

Everbearing
Strawberry

FREE A pair of **Mated Everbearing Strawberry** plants, large pkt. of new Cereal **Feterita, Sudan Grass** and **Silk Leaf Poppy** seed, all **Free for Testing**. Send 10c for mailing expense, or not, as you please. We offer genuine Progressive Everbearing plants at 50c per doz.; 90c for 50; $1.75 for 100; $5.00 for 325, all postpaid. CATALOG FREE.

The Gardner Nursery Co., Box 454, Osage, Iowa

ARCHDEKIN'S Fine Italian QUEENS
and Combless Bees

April, May, June, queens, warranted purely mated $1.00 each, 6 for $5.00, doz., $9.00. Bees per lb. $1.25. With untested queen, $2.00 per lb. I have originated a package light, but strong. Saves you bees and express. My guarantee is prompt shipment. safe arrival, perfect satisfaction. No disease.

Small deposit books your order.

J. F. Archdekin, Bordlonville, Louisiana

STRAWBERRY (OF ALL KINDS) PLANTS

Fine stock of the wonderful Everbearing plants at right prices. Small fruit plants for farm and garden. Write for catalog. Return this ad. and several fruit-growers names for one-half dozen Everbearing plants free.

BRIDGMAN NURSERY CO., BOX 44, BRIDGMAN, MICH.

TALKING QUEENS

Laws Queens Speak for Themselves

Please remember Laws' queens have stood the test of continuous advertising in this journal for this the 28th season. Thousands of customers have testified to the merits of Laws' bees and queens, and if there is a displeased customer I do not know it.

I will begin mailing queens as usual in March. Single tested queen, $1.25. Select Tested, $2.00. Untested will be ready in April; after which see the following table.

	April to June			June to November		
	1	12	100	1	12	100
Untested	$1.00	$ 9.00	$ 75.00	$ .75	$ 8.00	$ 65.00
Tested	1.25	10.00	85.00	1.00	10.00	75.00
Select Tested	2.00	18.00	120.00	1.50	15.00	100.00

Breeding queens: Guaranteed none better, at all times: each $5.00.

Combless Bees AFTER May 1st.

1 lb. package, $1.50; 5 to 10 packages each, $1.25; 10 to 50 packages, $1.15
2 lb. package, 2.50; 5 to 10 packages each, 2.25; 10 to 50 packages, 2.15
3 lb. package, 3.50; 5 to 10 packages each, 3.25; 10 to 50 packages, 3.15

Price of queens to be added to above packages.

When 10 or more packages are bought, empty carriers to be returned at my expense.

My queens are all reared in full colonies, plenty of young bees and abundance of fresh honey in the hives. No other plan is so conducive to full-developed and long-lived queens.

My facilities are such that I can mail from 5000 to 6000 queens each season. Circular on application.

Five per cent discount on all orders with the cash for either bees or queens booked this month.

Purity of stock and safe delivery guaranteed to your express or post office on all bees and queens from my yards.

Address **W. H. Laws, Beeville, Bee County, Texas**

Bee-line Queens---Italians Golden and 3-banded

Orders Booked Now. All orders that have cash accompanying them I will allow 5 per cent discount. This is good till April 15. Prices as follows:

Untested queen, one for $1.00; six, $5.50; twelve, $10.00
Tested queen, one for 1.25; six, 6.50; twelve, 12.00

We are wintering about 150 fine fall-reared queens, and they are tested; so if you are in need of a queen early we can supply you. We guarantee our queens to give satisfaction, or replace them, or refund the money you paid us for them. Our three-banded Italians walked away again with first honors at the Texas State Fair last fall. Orders booked now, and queens shipped when wanted.

B. M. Caraway, Bee-line Apiaries, Mathis, Texas

Beekeepers' Supplies

Send for new 1917 price list now ready. We are also in the market at all times for extracted and comb honey in any quantity. Give us a chance to bid on your supplies. We can save you money.

The M. C. Silsbee Co., Haskinville, N. Y.
P. O., Cohocton, N. Y., Rt. 3.

FRUIT GROWING and BEEKEEPING

are two closely allied occupations. Beekeepers should read "**THE SOUTHERN FRUIT GROWER**" which treats on all the phases of successful fruit growing, also gardening, etc. Established for more than 20 years. Edited by Robert Sparks Walker. 50c per year; 3 years for $1, or sample copy sent free to those who are interested. Address

THE SOUTHERN FRUIT GROWER
Chattanooga, Tenn.

The American Bee Journal

C. P. Dadant, Editor
Dr. C. C. Miller, Associate Editor
Frank C. Pellett, Staff Correspondent

Brimful of interesting reading matter. Articles on Marketing Honey, on Swarm Prevention, Queen Rearing, Honey Production; in fact on everything pertaining to the advancement of beekeeping. Our Staff Correspondent and our Editor travel thousands of miles to visit beekeepers and report items of interest to our readers.

A few pounds of honey gained, a swarm saved here and there; it doesn't take much to make up the price of a subscription, and we believe it can be the means of saving much more than its cost to you.

Try it for a year. We believe you'll keep on as a regular subscriber. We can start you with the January issue if you write at once.

PUBLISHED MONTHLY, $1.00 A YEAR

American Bee Journal, Hamilton, Illinois

We are Now Booking Orders for Bees in 2-lb. Packages

with or without queens, for delivery after May 1

Have an order from Mr. R. F. Holtermann for 50 two-pound packages with queens.

Under date of 9/29/1916, Mr. L. C. Keet of Black River, N. Y., writes, "Your two-pound packages did fine. Two of mine made 90 pounds surplus, and the rest averaged about 50 lbs. with honey left to winter on. Mr. G. B. Howe averaged nearly 100 pounds per colony from his, but there is not any left in the hives." We make the following terms: Booking received only with a 10 per cent deposit, no booking received on this offer after April 1st. Prices F. O. B. Moore, Tex.

With Queens: 2-pound packages, $3.00 each; in lots of 10 to 25 packages, $2.90 per package.

Without Queens: 2-pound packages, $2.35 each; in lots of 10 to 25 packages, $2.25 per package.

Safe Arrival Guaranteed.
This ad will not appear again.

O. E. Milam, Moore, Texas
Reference, Moore National Bank

Italian Queens for 1917 --- 3-banded

Will be ready by April 1 to begin mailing untested queens of my exceptionally vigorous strain of Italian bees. They are gentle, prolific, and the best of honey-gatherers. Give them a trial.

Untested, $1.00; 6, $5.00; 12, $9.00.
Tested, $1.25; 6, $6.50; 12, $12.50.

Will book orders now. Send for my free circular and price list, and see the natural conditions under which my queens are raised. Safe arrival and satisfaction guaranteed.

JOHN G. MILLER
723 C St., Corpus Christi, Texas

Increase Your Honey Crop

by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested, each, $1; 6, $5. Tested, each, $1.25; 6, $5.50. Breeders, $5.

FRED LEININGER & SON, Delphos, Ohio

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold.
D. Steengrafe, 81 New St., New York.

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

FOR SALE.—No. 1 and fancy white-clover comb honey, 15 cts.; No. 2, 12½ cts.
Nelson Dewey, Adrian, Mich.

FOR SALE.—White clover and buckwheat extracted honey. Price on application.
I. J. Stringham, 105 Park Place, New York.

FOR SALE.—Pure honey and beeswax—Porto Rico, Cuban, etc.
D. Steengrafe, 81 New St., New York.

FOR SALE.—Choice table honey, thoroly liquefied, in new 60-lb. cans, at 12½ cts.; dark amber, 10.
Van Wyngarden Bros., Hebron, Indiana.

FOR SALE.—3000 lbs. white-clover honey in 6-oz., pint, quart, and five-gallon cans. Write for price list. W. O. Hershey, Landisville, Pa.

FOR SALE.—No. 1 white comb, $3.50 per case; No. 2, $3.00; No. 1, fall comb, $3.00; No. 2, $2.50; 24 sections to case. In six-case lots 10 per cent discount. H. G. Quirin, Bellevue, O.

HONEY AND WAX WANTED

WANTED.—Beeswax.
Van Wyngarden Bros., Hebron, Indiana.

WANTED.—Extracted honey at jobbing prices. National Honey-Producers' Asso., Kansas City, Mo.

WANTED.—Clover and amber extracted honey. Highest cash or trade price.
Deroy Taylor Co., Newark, N. Y.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED.—Extracted clover honey in any quantity; send sample and lowest cash price.
E. B. Rosa, Monroe, Wis.

WANTED. — Extracted clover and light-amber honey in any quantity. Send sample and lowest price. C. O. Bergstrand, Balsam Lake, Wis.

WANTED.—White-clover and light-amber extracted honey. Will buy in lots of 1000 lbs. to a carload. Send sample and lowest price.
M. E. Eggers, Eau Claire, Wis.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

FOR SALE

Get our new Rubber Stamp and Label Catalog.
Acme Printing Co., Medina, Ohio.

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Ct.

SEND TODAY for sample of latest Honey Labels. Liberty Pub. Co., Sta. D, box 4-E, Cleveland Ohio.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—Circular-saw mandrels, and emery-wheel stands. Charles A. Henery, Eden, N. Y.

Comb foundation cheap, factory to beekeeper direct.
J. J. Angus, Grand Haven, Mich.

FOR SALE.—300 tin supers in good condition.
J. A. Everett, Edgewater, Colo.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Greenville, Tex.

How to double your honey production at a small cost. Send 2-ct. stamp for information.
W. M. Budlong, 1526 14th Ave., Rockford, Ill.

FOR SALE.—2000 A1 standard L. frames, wired and built on full sheets of foundation, and absolutely free of all disease. Jas. H. McCue, Alabaster, Mich.

We carry a complete line of bee-supplies. Ask for our bee-supply catalog. Let us quote you on your requirements.
Deroy Taylor Co., Newark, N. Y.

Good second-hand 60-lb. cans, 2 cans to the case, 30 cts. per case, in lots of 10 cases or less. In lots of 25 cases or more, 25 cts. per case. These prices are f. o. b. Cincinnati. C. H. W. Weber & Co., 2146-2148 Central Ave., Cincinnati, O.

THE ROOT CANADIAN HOUSE.—54-56 Wolseley St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—Fifty new ten-frame hives with metal covers complete, with frames nailed and wired at $1.75 each, in lots of 25 or more at $1.50 each; also 50 ten-frame supers nailed and wired, hives and supers painted two coats, at 60 cts. each, for the supers; in lots of 25 or more 50 cts. each.
M. C. Silsbee Co., P. O. Cohocton, Rt. 3. Haskinsville, N. Y.

FOR SALE.—Well-established retail honey business in one of the largest industrial centers of the world. Reason for selling is that my apiaries are too far away to work to advantage, so I wish to move near the bees and devote all my time to them. A rare opportunity for a live man with a little capital. Established 1910. John C. Bull, 811 So. Hohman St., Hammond, Indiana. Phone 1023 J.

PATENTS

Patents secured or all fees returned. We help sell patents. Patents advertised free. Send data for actual free search. Books free. Credit Given. E. E. Vrooman & Co., 834 F St., Washington, D. C.

GOATS

MILCH GOATS.—"Profit and Pleasure in Goat-Keeping," pronounced by experts the best goat book, regardless of price; profusely illustrated; by mail, 35 cents. Fred C. Lounsbury, Plainfield, N. J.

POULTRY

S. C. Brown Leghorns; stock, eggs, baby chicks. Circular. H. M. Moyer, Boyertown, Pa.

S. C. R. I. Reds, direct descendants of my winners at Omaha, Sioux City, and Lincoln. Only selected stock for sale. Otto Timm, Rt. 1, Bennington, Neb.

White and Buff Wyandotte and Dark Cornish eggs for hatching, from heavy-laying as well as prize-winning stock. Be sure to get my catalog before you buy. "It's free." Get the winners and payers. I am booking orders now.
Joseph G. Cox, Valencia, Pa.

Beekeepers should be keepers of chickens also. Try my winter-laying, prize-winning, 200-egg strain of White Wyandottes. Eggs, chix, and breeding stock for sale. Tell me how many you want, and when, then I will quote prices to please you.
Dr. Elton Blanchard, Youngstown, Ohio.

POULTRY PAPER, 44-124 page periodical, up to date, tells all you want to know about care and management of poultry, for pleasure or profit; four months for 10 cents. Poultry Advocate, Dept. 56, Syracuse, N. Y.

WANTS AND EXCHANGES

Wax and old combs wanted for cash or to make up on shares, beekeeper to factory direct.
J. J. Angus, Grand Haven, Mich.

WANTED.—Man to wear fine suit, act as agent. Big pay, easy work.
Banner Tailoring Co., Dept. 502, Chicago.

WANTED.—To work an apiary in a good location on shares, with preference of buying. Must be free from disease. Harvey F. York, Avant, Okla.

What have you in exchange for a good "Boswell" stereopticon outfit, complete with slides, Bausch & Lomb lens?
Van Wyngarden Bros., Hebron, Indiana.

WANTED.—Bees in lots of 25 to 250 colonies within 300 miles of Detroit. Correspondence with full particulars solicited.
A. W. Smith, Birmingham, Mich.

WANTED.—Every beekeeper to plant hardy northern nut-trees, budded and grafted; pecans, English walnuts, and chestnut; immense profits. Catalog free. R. L. McCoy, Lake, Ind.

WANTED.—Queen-breeder to take up proposition to supply our members with queens. Location and equipment furnished. About 3000 queens used in 1916. Idaho-Oregon Honey-producers' Association, New Plymouth, Idaho.

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1917. Our catalog and price list will be mailed to you free. Order early and get the discounts.
C. E. Shriver, Boise, Idaho.

REAL ESTATE

FOR SALE.—My home in Redlands, Cal. Will include bees if desired.
P. C. Chadwick, Redlands, Cal.

VIRGINIA, N. C., W. Va., & Ohio Farms at $15.00 per acre and up offer big value for the price. Best climate, markets, schools, and transportation. Good land and neighbors. Write F. H. LaBaume, Agr. Agt. N. & W. Ry., 246 Arcade, Roanoke, Va.

FOR SALE.—A 60-acre farm ½ mile from city limits; 3 acres timber; 1000 peach-trees, 2 and 3 years old; good buildings; large shade-tree; ideal location for fruit, poultry, and bees. Price $65 per acre; $1000 down. Address
H. Feldman, Rt. 4, Dowagiac, Mich.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free. C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

FOR SALE.—Twenty-acre ranch; improvements; 4-room house; barn; 9 acres in alfalfa; will include bees and live stock if desired, at railroad station.
Jacob Probst, East Nicolaus, Cal.

BARGAIN.—If taken before March 1, house, lot, and 90 colonies of bees at Schurz, Nevada, $600; close to school, church, stores, and depot. Splendid location, fine honey. H. F. Hagen, Reno, Nevada.

FOR SALE.—Ten-acre farm in Maricopa Co., Arizona, 4 miles east of Phoenix, and one lot in corporation of Phoenix. Orchard of 600 fruit-trees; house, good well; house for extracting honey, Cowan reversible extractor; one-burner gasoline-stove, capping-melter, wheelbarrow, hives. For further particulars address John S. Miller, Rt. 9, Archbold, O.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 De Wolf St., Vincennes, Ind.

Well-bred bees and queens. Hives and supplies.
J. H. M. Cook, 84 Cortlandt St., New York.

FOR SALE.—20 colonies of bees near Ft. Pierce, Fla. P. W. Sowinski, Bellaire, Mich.

FOR SALE.—6 colonies of bees and complete equipment for same, including extractor, etc.
Mrs. J. B. Dochter, Christiana, Pa.

Nutmeg Italian queens and Root's beekeepers' supplies, Root's prices.
A. W. Yates, 3 Chapman St., Hartford, Conn.

Fine Italian queens and bees. Send for our 1917 calendar, free.
A. E. Crandall & Son, Berlin, Conn.

My choice northern-bred Italian queens are hardy, and will please you. Orders booked now for spring delivery. Free circular. F. L. Barber, Lowville, N. Y.

BUSINESS FIRST QUEENS.—Tested queens ready now. Send for price list containing my $10 free offer. M. F. Perry, Bradentown, Fla.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen.
C. F. Alexander, Campbell, Cal.

FOR SALE.—Fifty colonies, 8 frames, modern hives, in good condition. Write for prices.
Walker Barr, Rt. 2, Holt, Mo.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1; 6 for $5. Wm. S. Barnett, Barnetts, Va.

FOR SALE.—80 colonies of fine bees at Tularosa, N. M.; good location; good place to live, because owner deceased. Address N. B. Dewitt, care of E. P. & S. W. Ry., Douglas, Ariz.

FOR SALE.—253 colonies of bees at Columbus, Miss., at $1200—a big bargain. Best location in U. S. for honey, bees, or queens; or will let on shares.
N. Gute, 2363 Fulton St., Toledo, O.

FOR SALE.—25 colonies of Italian bees, frames wired, combs built on full sheets of foundation; 8-fr. colonies, $6; 10-fr., $7 with queen.
Henry Shaffer, 2860 Harrison Ave., Cincinnati, O.

Swarms in packages, also Italian queens, can be had—the kind that will increase your smiles and your bank account from W. D. Achord, of Fitzpatrick, Ala. See his large ad't elsewhere in this magazine. Circular to you for the asking.

Golden Italian queens of the quality you need. Bred strictly to produce Golden bees that are real workers. Delivery after March 25. Untested, 1, 75 cts.; dozen, $8.25; 50, $32.50; 100, $60.00. Bees by the pound, nucleus, or full colony. Money back if not satisfied.
L. J. Pfeiffer, Motor Route A, Los Gatos, Cal.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each.
Henry S. Bohon, Rt. 3, box 212, Roanoke, Va.

FOR SALE.—Ten colonies Italian bees in Buckeye double-walled hives, all in first-class condition. New queens introduced last fall; $10.00 per colony.
Keewaydin Farms, Gates Mill, Ohio.

Golden and 3-band Italians; also Carniolan queens; tested, $1.00 each; untested, 75c; for larger lots and bees in packages and nuclei write for prices.
C. B. Bankston, Box 65, Buffalo, Texas.

My 3-banded Italian queens will be ready to ship April 1. Write for prices of bees and queens by the pound. Safe arrival and satisfaction guaranteed.
J. A. Jones, Greenville, Ala.

FOR SALE.—Italian bees and queens. One-pound, two-pound, and three-pound packages, with queens; also on frames and full colonies. Ask for our prices and beginners' catalog.
Deroy Taylor Co., Newark, N. Y.

My bright Italian queens will be ready to ship April 1 at 75 cts. each; virgin queens, 30 cts. each. Send for price list of queens, bees by the pound; safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

Two-frame nuclei, 3-band Italian bees, $2.25; 1 lb. bees with queen, $1.65. Hoffman brood-frames, wired, and foundation, at catalog prices less carriage, if ordered for parcel post. J. B. Marshall & Son, Rosedale Apiaries, Big Bend, La.

FOR SALE.—1000 lbs. bees in 2-lb. packages at $1.00 per lb. Untested Italian queens, 70 cts. extra, to be shipped in April. All orders must be in by April 1.
T. W. Burleson, Waxahachie, Texas.

My bright Italian queens will be ready to ship April 1, at 60 cts. each; virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, $1.00; 6, $5.00; tested, $2.00; breeders, $5.00 to $1.00.
J. B. Brockwell, Barnetts, Va.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, $1.00; 6, $5.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Sons, Wilcox St., Binghamton, N. Y.

Golden Italian queens, bred strictly for business, that produce a strong race of honey-gatherers, untested queens 75 cts. each; $8.00 per dozen: $60.00 per 100; tested, $1.50 each. Prompt service and satisfaction guaranteed.
L. J. Dunn, 59 Broadway Ave., San Jose, Calif.

QUEENS.—Improved three-banded Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, $8.00; select, $1.00; dozen, $10.00; tested queens, $1.25 each; dozen, $12.00. Safe arrival and satisfaction guaranteed.
H. C. Clemons, Rt. 3, Williamstown, Ky.

FOR SALE.—Three-banded Italian bees and queens. 1 untested queen, $1.00; tested, $1.50; 3-frame nucleus with untested queen, $4.00. My queens are reared from the best breeders and by the best known methods. No diseases. Satisfaction guaranteed. Ask for prices on larger quantities.
J. L. Leath, Corinth, Miss.

QUEENS, Doolittle and Moore strain, also Goldens that are Golden. 1 select unt., $1.00; 6, $4.25; 12, $8.00; tested, $1.25. Best breeder, $5.00.

Bees by the pound a specialty. One 1-lb. package $1.25; one 2-lb., $2.25; large lots less; also nuclei and colonies. Ready March 15. Booking orders now. Circular free.
J. E. Wing, 155 Schiele Ave., San Jose, Cal.

FOR SALE. — 35 colonies bees, eight and ten frame, supers, half metal tops, straight combs, wired frames, no disease, $5.00 per takes the lot.
S. H. Burton, Washington, Indiana.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money returned by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

FOR SALE.—Three-band Italian bees and queens. Three-frame nuclei with this year's rearing queen, $3.00; without queens, $2.75. Three pounds bees, $3.25. Young queens, 75c each. Our bees and queens last year gave general satisfaction and this year we are in position to give stronger nuclei with a greater per cent brood than we did last year. If it is a bargain you are looking for, send your order this way. Send your orders now and money when you want them shipped. Can begin shipping April 15th. Bees are all in standard hives, Hoffman frames, wired and full sheets foundation. We guarantee bees to be free from disease. The following is an extract from one of our many satisfied customers. "Aug. 16th, today, I hived the second large swarm from the colony I started from a three-frame nucleus I bought from you in June and have about 40 lbs. surplus honey on hive. It pays to keep well-bred stock whether it is cattle or bees." (Name furnished on application.)
The Hyde Bee Co., Floresville, Texas.

MISCELLANEOUS

Quality Dahlias (northern grown). Send for catalog. Mrs. E. L. G. Davis, Rt. 2, Newton, N. H.

Vulcanizing tires and tubes pays large profits in any town. I have a Haywood casing and tube vulcanizer that cost $500, and is almost new. It will vulcanize or retread any size tire. It is all complete with boiler, stock, and tools; $250 takes it—half cash; time on balance. Send for photo and description. L. F. Howden, Fillmore, N. Y.

HELP WANTED

WANTED.—Man to work six-acre place in village, and help with bees.
D. L. Woodward, Clarksville, N. Y.

WANTED.—Two men to work with bees the coming season; must have some experience.
B. B. Coggshall, Groton, N. Y.

WANTED.—Position with beekeeper by young man of good character with 8 years' experience.
K. C. Smith, Salesville, Ohio.

WANTED.—Experienced beeman familiar with Rocky Mountain conditions to handle bees on shares. Can offer good proposition. Write with details of experience, etc. A. H. Dunn, Fort Collins, Colo.

WANTED.—A man by March 1, with some experience, to assist in running 800 colonies and learn comb-honey production. Live in town. State wages desired, and description of self in first letter.
G. C. Matthews, Hansen, Idaho.

WANTED.—To correspond with a first-class queen-breeder who would like to come to Arizona and help build up a good queen-breeding and bees-by-the-pound business on shares. Bees usually begin gathering pollen in February. Good references required. Dan Rorabaugh, Duncan, Ariz.

WANTED.—Young man with a little experience, fast willing worker, as student helper with our 1000 colonies. Crop for past two years, 6 carloads. Will give results of our long experience and small wages; every chance to learn. Give age, height, weight, experience, and wages, *all* in first letter, or expect no answer E. F. Atwater, Meridian, Idaho.

WANTED.—From April 1 until Sept. 15, 1917, a man who has had some experience with bees to help work in apiary. State wages, with board furnished, in first letter. Frank C. Alexander, Schoharie, N. Y.

Two young men can, during the season of 1917, reap the benefit of my experience for nearly forty years with up to 800 colonies of bees; also as public demonstrator with bees and lecturer and experience in beekeeping at the Ontario Agricultural College. One with clean body and mind required. Board; and, if the season is good, a little more given.
R. F. Holtermann, Brantford, Ontario, Canada.

TRADE NOTES

We would again notify the readers of GLEANINGS that we begin on March 1 the better subscription policy of discontinuing all subscriptions on expiration—excepting those who specifically write us asking that their subscription be continued after expiration, and telling us on or about what date they expect to remit. This is not only the better subscription policy, but it is the one that a majority of our readers have come to prefer. Well, then, after March 1 we shall run nobody into debt for this journal—except by his own express order—and expired subscriptions will be discontinued. We believe that every reader of GLEANINGS will agree that this is the better business way, the just way, and the honest way to treat subscribers.

SECOND-HAND CANS ADVANCED.

Since the great increase in the price of new cans for honey we are receiving more inquiries for our choice second-hand cans than we are able to furnish. To be more in line with the present price of new cans we quote, till further notice, on second-hand cans of sixty pounds capacity, two in a case, at $5.00 for 10 boxes; $11.00 for 25 boxes, or $40.00 per 100 boxes. We already have contracts for all that we may accumulate for some weeks, and will accept orders only at these prices, subject to supply available.

BEESWAX ADVANCED.

Largely due to a heavy export demand for beeswax the market has advanced in recent weeks so that we are warranted in offering 31 cents cash, 33 in trade, for average wax delivered at Medina; two cents less delivered at our California branches, or one cent less at other branches.

For choice yellow we pay one to two cents extra. This is as high a price as we were paying before the great war broke out two and a half years ago, after which the price dropped about ten cents a pound. It has been slowly coming back to the former level.

If prices should advance any further it will be necessary to make an advance in the price of comb foundation, for we cannot work on any less margin between prices named above and present prices of comb foundation.

If you want your wax worked into foundation we are prepared to work it at very reasonable rates, which we will quote on application. The quantity should be at least 25 pounds and upward.

The A. I. Root Co., Medina, O.

Convention Notices

The annual convention of the Southeastern Minnesota and Western Wisconsin Beekeepers' Association will be held at Winona, Minn., in the Courthouse, Feb. 27, and 28, 1917.

O. S. Holland, Sec.

The annual convention of the Pennsylvania State Beekeepers' Association will be held in the capitol building, Harrisburg Pa., March 2 and 3, 1917. An interesting program in preparation.

H. C. Klinger, Sec-.Treas.
Liverpool, Pa., Jan. 15.

The New Monthly, "The Domestic Beekeeper"

Have you seen the New DOMESTIC BEEKEEPER, successor to the Beekeeper's Review? It appeared January 1, 1917, with a new dress and improved in many ways. Besides the eight extra pages, each page is nearly 60 per cent larger than the old Review. We are paying much more for material and labor in getting out the DOMESTIC BEEKEEPER than the Review cost, but we are selling it at the same price—i. e., $1.00 per year. If you take advantage of the long-time subscription the price is even less than before the enlargement. We quote the DOMESTIC BEEKEEPER one year, $1.00; two years, $1.50; three years, $2.00; five years, $3.00. We are printing several extra sets of the DOMESTIC BEEKEEPER, so can begin your subscription with the January number, thus making your volume complete.

What We are Doing for Our Subscribers

Likely the most important feature of the DOMESTIC BEEKEEPER, from a financial standpoint, is our service department, where we buy almost everything needed by honey-producers at a considerable saving to them. Beekeepers' supplies, including honey-containers, are a special feature with this department. Then we have a department (absolutely free) where our subscribers' crop of honey is listed. This department has sold, without cost to our subscribers, many hundred tons of honey. You should take advantage of this department. If you have beeswax to be made into foundation, we handle it for you at a saving, having it made by any manufacturer you prefer. Your first number of the DOMESTIC BEEKEEPER will explain how to proceed to take advantage of this proposition.

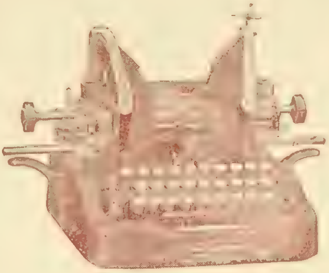
The Editor is one of a committee whose object is to establish a selling price of honey, both at wholesale and retail. You should all keep tab on this great movement; and the DOMESTIC BEEKEEPER will be headquarters for information along this line. Subscribe today, so as not to miss a single thing said upon this important subject. There is not a single honey-producer who sells honey but is more or less interested in this great scheme, which is destined to become national in character. All producers of honey should get togther and help this move along. You will find the DOMESTIC BEEKEEPER always working *wholly* for the producer, and the one journal that all producers should support. Remember the new address,

The Domestic Beekeeper, Northstar, Michigan

17 CENTS A DAY BUYS

The No. 9 OLIVER

The Standard Visible Writer



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Common Sense for Constipation

Why treat your insides as tho they were an enemy? Why "blast them out?" It's dangerous. And—unnecessary. A little common sense will secure the same effect—you will be a lot more comfortable and—*results will be lasting.* You will be rid of indigestion, constipation, and more serious ills to which they lead, for all time. Not difficult but easy. No drugs. No tiresome routine. Just plain common sense about food you eat—a little exercise—and proper rest and sleep. Simple—sensible—natural—effective. You will find full and complete instructions for this effective method in a new book called "Colon Hygiene" written by the greatest living authority on foods, feeding and digestion. Over 400 pages. Only $2.00. Write for it today. You take absolutely no risk. For—if you are not entirely satisfied with this book—if you do not find "Colon Hygiene" one of the most sensible, practical, useful and valuable books you have ever read—return it at once and we will at once refund every penny sent us. Is this fair? Then order "Colon Hygiene" N O W. Be rid of constipation, indigestion and all their discomforts and dangers.

Use the Coupon
Or ask at any High-class Bookshop

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1001 Main St., Battle Creek, Mich.
For attached $2.00, send me "Colon Hygiene" with privilege of return in five days. (Write your name and address in the margin.)

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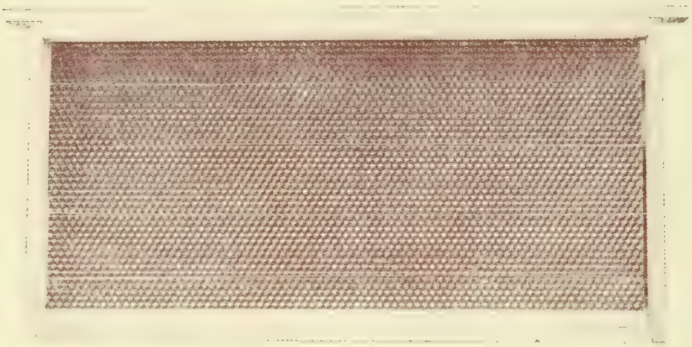
Full Sheets of

Dadant's Foundation

in all your Brood-frames and Sections



1—Mean nice straight combs for you to handle.
2—Save the bees time, work and honey.
3—Prevent a useless aggregation of drones which do not produce but consume a large quantity of honey.
4—Mean a maximum force of worker bees to gather the crop.

Besides, Dadant's Foundation is always sure to be accepted by the bees as promptly as it is given to them. Tests by practical beekeepers have shown that they accept "Dadant's" first.

All these points insure a maximum crop of honey stored in the best shape for either home use or for market.

New Electric

Wire-imbedder

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for

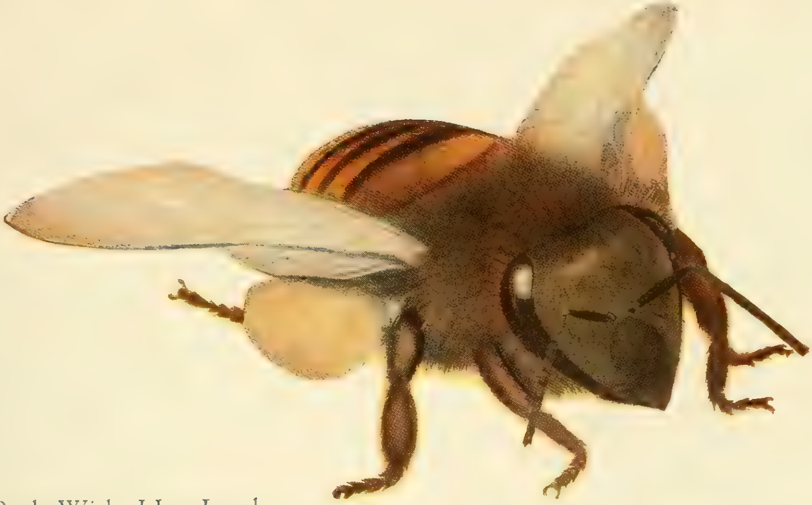
Price
Postpaid
without
Batteries,
$1.00

The newest and best wire imbedder on the market. Does the work quickly and so thoroly that the wires seem to have "grown" in the sheets.

It is a "dandy" and you should have one. OUR CATALOG—lists practically everything given in other catalogs and a few new articles besides. Send for one today.

Dadant & Son . . Hamilton, Illinois

Gleanings in Bee Culture



Back With Her Load—

THE REMARKABLE MATING EXPERIMENT
BEES IN POUND PACKAGES (SYMPOSIUM)
FROM 1 COLONY TO 532
THE C. H. ROOT WINTER CASE
BEGINNERS' LESSONS AND QUESTIONS

VOL. XLV MARCH, 1917 No. 3

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you SPOT CASH for any thing you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.
633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

EARLY SHIPMENTS of QUEENS and BEES by the Pound

Write us for our prices and descriptive circular of our bees and queens. And if you will state size and how many packages you will need, and give your express office we will tell you what the bees will cost delivered.

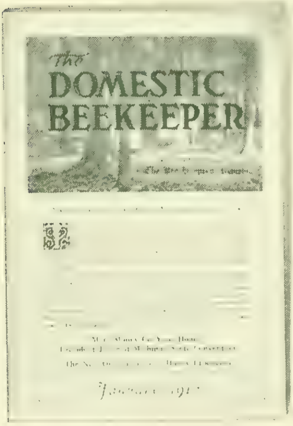
R. V. Stearns, ... Brady, Texas

BEES and QUEENS

We wish to offer to the readers of "Gleanings" a chance to procure some of our fine stock of bees. Untested queens, March, April, May and June, $1.00 each, $5.00 for 6, $9.00 per dozen. Lots of 25 to 100, at 70 cents each. For larger quantities ask for prices. Best tested queens $2.00 each. Three races only—Three Band, Golden Italians, and Carniolans, reared in separate yards.

Bees by the pound in combless packages $1.50 per lb.; 5 to 10 lb. lots, $1.25 per lb. In lots of 25 to 100 lbs., $1.00 per lb. Safe arrival and reasonable satisfaction guaranteed. Our shipping facilities are good and promptness our motto.

THE CRESMER MANUFACTURING COMPANY, Bee Department, **Riverside, Cal.**



The DOMESTIC BEEKEEPER

A SPECIAL INTRODUCTIONAL OFFER.

THE DOMESTIC BEEKEEPER

for six months, beginning with the January, 1917, number (we have the back numbers) for only 25c.

The Domestic Beekeeper (successor to the Beekeepers' Review) is now a 48-page magazine with cover, much larger and better every way than the old Review. . . . We want you to see for yourself what a large and interesting journal the **Domestic Beekeeper** is and are offering you this special price for a trial subscription for six months, the first half of 1917. . . Just wrap 25c in one or two cent stamps in a paper and mail it to

The Domestic Beekeeper . Northstar, Mich.

CONTENTS

MARCH, 1917

Editorials 169
Bees in Pound Packages........E. R. Root 172
From 1 Colony to 532........Ira D. Bartlett 178
The Root Winter Case ....E. R. Root 181
Conversations with Beekeepers........G. M. Doolittle 183
Letters from a Beekeeper's Wife........"Mary" 184
Progress of Beekeeping in Virginia........Francis W. Gravely 185
Testing the Breeders........ 185
Wide Spacing for Swarm Control........C. F. Bender 186
Why Dequeen the Cell Builders........Frank M. Alley 186
One of the Old Veterans........L. E. Webb 187
With a Three-frame Nucleus........J. W. McMillan 187
Effective National Advertising ....A. F. Bonney 188
Stray Straws........Dr. C. C. Miller 189
Notes from Canada........J. L. Byer 191
In California ....P. C. Chadwick 193
The Dixie Bee........Grace Allen 195
Siftings ....J. E. Crane 196
In Texas ....F. B. Paddock 197
Florida Sunshine ....E. G. Baldwin 198
Around the Office ....M. A. O. 199
Can This be Done?........The Editors 200
Our Food Page........Stancy Puerden 202
Beekeeping as a Side Line........Grace Allen 203
Gleaned by Asking........E. R. Root 204
Beginners' Lessons ....H. H. Root 206
Just News ....The Editors 209
Nursery Rhymes ....M. G. P. 211
Heads of Grain from Different Fields........ 212
Our Homes ....A. I. Root 215

SUBSCRIPTION RATES.—One year, $1.00; two years, $1.50; three years, $2.00; five years, $3.00. Canadian subscription, 30 cents additional per year, and foreign subscription, 60 cents additional. **DISCONTINUANCES.**—On and after March 1, 1917, all subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name that appears on the paper. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order or check. **CONTRIBUTIONS** to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

(Entered as second class mail matter at the Postoffice at Medina, Ohio.)

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

Editorial Staff

E. R. ROOT	A. I. ROOT	H. H. ROOT	J. T. CALVERT
Editor	Editor Home Dept.	Managing Editor	Business Manager

Bee Supply Department

Orders shipped day received.

Our Warerooms are loaded with
Lewis Beeware.

Every thing at factory prices.

Send for Catalog.

Wax Rendering Department

We do perfect wax rendering. It will pay every beekeeper to gather up all his old comb and cappings and ship to us. We charge 5c a pound for the wax we render, and pay the highest cash or trade prices.

The Fred W. Muth Co.

The firm the Busy Bees work for

204 Walnut Street . . . . Cincinnati, Ohio

HONEY MARKETS

CHICAGO.—During the past month honey has sold quite well. Especially is this true of extracted, and it would appear that there is not much more to be marketed. Comb honey has moved off more freely, and stocks are being reduced to a moderate quantity. Indications are that there will not be much carried over in this market. Prices for white extracted honey are 10 cts. per lb.; amber, 8 to 9; comb honey, 14 for the best grades, and the light ambers 12 to 13. Very little of the darker grades is on the market, but sell readily at from 1 to 2 cts. less. Beeswax is very firm, and brings 33 to 35.
Chicago, Ill., Feb. 19. R. A. Burnett & Co.

SAN FRANCISCO.—Extracted honey of all descriptions is in light supply, and the few odd lots arriving are being sold when offered. Prices range entirely according to what the buyer will pay, as there are really no standard quotations dependable except from day to day. Comb honey is moving slowly, but selling better than last month, and stocks are not heavy. We quote extra fancy comb honey, per case, $3.00 to $3.10; fancy, $2.75 to $3.00; No. 1, $2.25 to $2.50. Light-amber extracted honey, in cans, brings 8 to 9; amber, in cans, 6½ to 8. Clean average yellow beeswax brings 30 to 32.
Leutzinger & Lane.
San Francisco, Cal., Feb. 15.

LOS ANGELES.—These prices are what the retailer pays our wholesale customers, not what we are buying at. No extracted in bulk is left on this market; small stocks bottled goods; next season's crop prospects are favorable. We quote extra fancy comb honey, per case, $4.25; fancy, $3.85; No. 1, $3.25; No. 2, $2.50. Water-white extracted honey brings 10; light amber, in cans, 9; amber, in cans, 7. Clean average yellow beeswax brings 35. Wax is being held for foundation, demand strong.
Los Angeles, Cal., Feb. 15. Geo. L. Emerson.

ST. LOUIS.—The demand for comb honey has not improved since our last quotation, and our market is well supplied. Extracted honey is in good demand, and supplies are limited. We quote extra fancy comb honey, per case, $3.50; fancy, $3.25; No. 1, $3.00; No. 2, $2.50. Light-amber extracted honey, in cans, brings 8½; in barrels, 8; amber, in cans, 8; in barrels, 7½. Clean average yellow beeswax brings 34.
R. Hartmann Produce Co.
St. Louis, Mo., Feb. 16.

PORTLAND.—Demand for comb honey is light; stocks are plentiful. Prices are very unsatisfactory, leaving the jobber no profit. Railroad rates are almost prohibitive on local shipments. Fairly good demand for extracted honey. Best grades are out of the producers' hands, and very little demand for cheaper grades. We quote fancy comb honey, $3.00; No. 1, $2.75; No. 2, $2.50. White extracted honey brings 8; light amber, in cans, 7; amber, in cans, 6. Clean average yellow beeswax brings 25 to 26.
Portland, Ore., Feb. 12. Pacific Honey Co.

PHILADELPHIA.—We are entirely sold out of all undergrades of comb honey, and could still move some shipments that could be moved around at 11 to 13 cents. Now is the time to get these grades marketed if you have any. We are offering our best white at 18 cents, cases of 24 combs each. No extracted to offer. Chas. Munder.
Philadelphia, Pa., Feb. 16.

KANSAS CITY.—The honey market seems very firm on extracted, and we notice an increased demand for comb honey. We quote fancy comb honey $2.85; No. 1, $2.75; No. 2, $2.50. Light-amber extracted honey, in cans, 9½; amber, in cans, 8. Clean average yellow beeswax brings 30.
C. C. Clemons Produce Co.
Kansas City, Mo., Feb. 16.

PITTSBURG.—Demand is rather quiet, supply meeting full requirements, prices ranging as previously reported. We quote extra fancy comb honey, per case, $3.75 to $3.90; fancy, $3.50 to $3.60; No. 1, $3.00; No. 1 buckwheat, $3.40 to $3.50.
Pittsburg, Pa., Feb. 19. W. E. Osborn Co.

PHOENIX.—Our honey was all sold some time ago. The market closed higher, and with great demand. Prospects are bright for 1917. Bees are wintering finely. There is no honey on the market to quote. Clean average yellow beeswax brings 26.
Phoenix, Ariz., Jan. 30. Wm. Lossing.

CLEVELAND.—The demand for comb honey continues light, and it is one of the very few articles that have not advanced recently in price. We quote fancy comb honey, per case, $3.75 to $3.85; No. 1, $3.40 to $3.50; No. 2, $3.00 to $3.25.
Cleveland, O., Feb. 19. C. Chandler's Sons.

BOSTON.—Honey is moving well. We quote extra fancy comb honey, per case, $3.50; fancy, $3.25; No. 1, $3.00; No. 2, $2.75. White extracted honey brings 11 to 12; light amber, in barrels, 9 to 10. Blake-Lee Co.
Boston, Mass., Feb. 16.

TEXAS.—The honey has all been taken up except some inferior grades of dark honey that will be used for feeding purposes. Clean average yellow beeswax brings, on very unsettled offers, from 27 to 35.
Sabinal, Tex., Feb. 14. J. A. Simmons.

HAMILTON.—Demand is better for all kinds, and prices are advancing. We quote extra fancy comb honey, per case, $2.75; fancy, $2.50. White extracted honey brings in 60-lb. tins, 13 cts.; light amber, in cans, 11. F. W. Fearman & Co.,
Hamilton, Ont., Feb. 16. MacNab Street Branch.

MONTREAL.—Our stock of honey is small, and prices are firm. We quote extra fancy comb honey, per case, 18; fancy, 17; No. 1. 16; No. 2, 14. White extracted honey brings 13; light amber, in cans, 12½; in barrels, 12; amber, in cans, 11½; in barrels, 11. Gunn, Langlois & Co.
Montreal, Que., Feb. 16.

TORONTO.—Market is much firmer, and stocks are being rapidly exhausted. Some holders are asking ½ ct. per pound above the last market quotation. Eby-Blain Limited.
Toronto, Ont., Feb. 16.

CUBA.—Light-amber extracted honey in barrels, 60 cts.; amber, in barrels, 60. Clean average yellow beeswax brings 36. A. Marzol.
Matanzas, Cuba, Feb. 13.

FLORIDA.—There is no honey in this market at this time. S. S. Alderman.
Wewahitchka, Fla., Feb. 16.

BUFFALO.—Owing to extremely cold weather and unfavorable shipping conditions the demand for honey has not been very good for a short time past. However, with warmer weather and more favorable conditions of handling we expect to see an increased demand from now on. especially during the Lenten season. We quote comb honey, fancy white, 14½; No. 1 buckwheat, 11½. Gleason & Lansing.
Buffalo, N. Y., Feb. 20.

SYRACUSE.—The honey market here stands practically the same as at last quotations. Comb-honey stocks have been lowered generally, some having been sold to retailers at extremely low figures for its quality. We individually have nothing to offer to trade outside of city at present. Fancy comb honey brings $3.60; No. 1, $3.00. White extracted honey brings 9; light amber, in cans, 9. E. B. Ross.
Syracuse, N. Y., Feb. 20.

ALBANY.—The comb-honey market is very dull and slow demand. Altho honey is very cheap compared to other foods, it is considered a luxury now, and people are using their money to buy absolute necessities at abnormally high prices. Quotations are nominal, and subject to buyer's offer. We quote extra fancy comb honey, per case, 15; fancy, 13; No. 1, 1 1to 12; No. 2, 10 to 11; white extracted honey, per lb., 8½ to 9, good demand; light amber,

in cans, 7½, light stock; amber, 7. Clean average yellow beeswax brings 32 to 33. H. R. Wright.
Albany, N. Y., Feb. 20.

LIVERPOOL.—Honey has been in good demand since our last report. In London 1350 packages were sold out of 1715 offered, on the following range of prices: Jamaica, dark amber to pale, $12.00 to $15.12; liquid, dark to amber, $11.64 to $13.32. Cuban, dark to amber, $10.80 to $12.00; dark to pale, $11.64 to $13.32. San Domingo, dark to amber, $11.64 to $13.96; liquid, $13.92. Honolulu, liquid, dark to pale, $12.24 to $14.08. Chilian, the total import for the last year into Liverpool was 14,340 barrels. The market continues firm at our last quotations. Californian is in good demand at an improvement on the last rates quoted. Beeswax is somewhat dearer, and very little is offering. An increase can be obtained in our last quotations. Sales have been made of Jamaica ordinary fair, at $41.28 to $41.88. per cwt.
Liverpool, England, Jan. 25.

Honey has been in good demand since our last report. Of Jamaica, 220 casks sold at $11.76 to $13.44 per cwt. ex-store. Of Chilian, 200 barrels, pile 3, sold at $10.08 to $10.32 per cwt. Beeswax market is firm—no stocks of Chilian on hand; value $38.88 to to $43.74 per cwt. Taylor & Co.
Liverpool, England, Feb. 8.

MEDINA.—There are no new developments in the honey market. Stocks of extracted are undoubtedly picked up much closer than for many years and prices are firm thruout the entire country. Comb honey on the other hand has remained in somewhat slack demand and fair stocks are reported in all of the important centers, and considerable is believed to be in the hands of producers. We believe that it will be well cleaned up, however, before the arrival of the new crop.
Medina, O., Feb. 21. The A. I. Root Company.

VICTOR and HOME VICTOR
Multiple System
Water Heaters for
House Heating
Heats bath and kitchen boiler too. ONE STOVE AND ONE FIRE YEAR ROUND. There is nothing like it. Send for booklet.
S. V. Reeves, Mfr.
Haddonfield, N. J.

ALWAYS ON TOP
Established 1885
It will pay you to get our 50-page catalog and order early.
Beekeepers' Supplies
The Kind That Bees Need.
The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.
John Nebel & Son Supply Co.
High Hill, Montgomery Co., o.

BEE SUPPLIES Send your name for new catalog.
Dept. T, CLEMONS BEE SUPPLY CO.,
128 Grand Avenue, Kansas City, Mo.

BANKING BY MAIL AT 4%
Don't Take Risks
with your money. Deposit it in this bank where you are sure it will be safe, as well as earning 4 per cent interest, compounded twice a year.
Our conservative policy, honorable management, ample capital and surplus, together with strict state supervision assure security for every dollar.
Deposits may be sent BY MAIL in the shape of check, draft, money order, or the currency by registered letter.
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MEDINA, OHIO
A.T. SPITZER, Pres.
E.R. ROOT, Vice-Pres.
E.B. SPITZER, Cashier
ASSETS OVER ONE MILLION DOLLARS

BEESWAX WANTED
for manufacture into
"SUPERIOR FOUNDATION"
on shares (Weed process)
Our terms assure cheaper foundation
SUPERIOR HONEY CO., Ogden, Utah
Wanted: Extracted honey

Michigan Beekeepers

MARCH---This month you should decide whether you will produce the maximum crop from your locality.

You can get it if you go after it.

The necessary new equipment should be "ROOT QUALITY." Success comes easier with the best goods. We sell Root's Goods in Michigan. Let us send YOU our catalog. . . Beeswax wanted; 31 cts. cash, 33 cts. in exchange for goods for it delivered here.

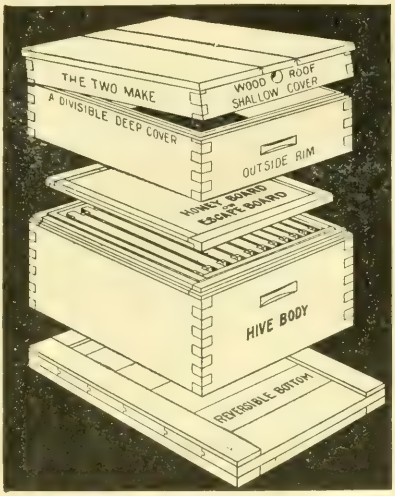
M. H. Hunt & Son, Lansing, Michigan
510 Cedar Street, North

Headquarters for Bee Supplies

Root's Goods at Factory Prices for Ohio, Kentucky, Tennessee

We carry a large and complete stock of bee supplies, and are prepared to give you prompt service. . We have just received several carloads of new fresh supplies. . . Send for our catalog.

C. H. W. Weber & Co., Cincinnati, O.
2146 Central Avenue

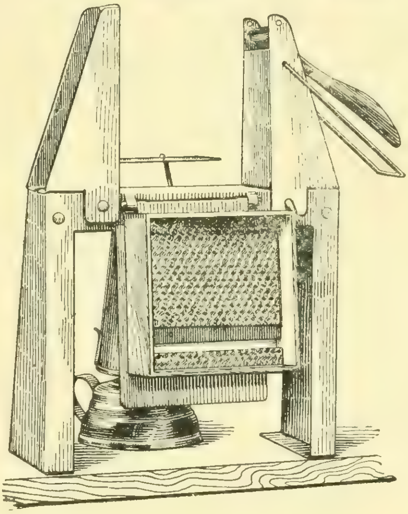


Protection Hives

Price $13.75 for five hives, $12.00 without outside rims, F. O. B. Grand Rapids; $15.00 for five hives with rims delivered to any point in the U. S. A. north of the Ohio and east of the Mississippi Rivers.

Double wall with air spaces, insulation or packing as you may prefer. If you have had occasion to spend any time in a building single-boarded during cold weather, you can appreciate the advantages of double walls. Single-wall hives often do not provide sufficient protection during brood-rearing in the spring.

An apiary of single-wall hives was visited during fruit bloom; the weather was cool ond no bees flying Old newspapers were called for and the wrapping of the hives was about half completed when there was an interruption. Returning again in the course of an hour or so, it was found that the bees in the wrapped hives were flying freely while those that were not still remained inside the hives. It is reasonable to conclude that if 20,000 bees were required to keep up the temperature that 5000 were released for field and other duty by the added protection given. Protection hives cost only about $1.00 more than single wall hives and are well worth the extra cost, which may be more than made up in a single season. Send for a special circular, 16 large illustrations.



Section-fixer

A combined section-press and foundation-fastener of pressed-steel construction. It folds the section and puts in top and bottom starters all at one handling, thus saving a great amount of labor. With top and bottom starters the comb is firmly attached to all four sides — a requirement to grade fancy. Increase the value of your crop by this method. H. W. Schultz, of Middleton, Mich., in writing us says: ''Your section-fixer is the best yet; can put up 150 sections per hour with top and bottom starters.'' Price with lamp, $2.75. Shipping weight 5 lbs. Postage extra. Send for special circular fully describing this machine.

Tin Honey-packages

A local wholesale house secured a carload of tin plate in September that was promised for April. Conditions are now even worse. When it is necessary to order tin plate a year or more in advance of the time it is wanted for use, advances in prices must be expected. The highest bidder will get the stock.

Freight at this time is very slow and uncertain. Prices are liable to advance. It would be a wise thing to secure your packages for the 1917 crop. Our three-year contract is giving us some advantage over general market quotations. Send us a list of your requirements at once. Our prices may have to be advanced again on March 20. We can supply the following 60-pound cans one and two in a case.

FRICTION-TOP TINS.	2 lb.cans	2½ lb.cans	3 lb.cans	5 lb.pails	10 lb.pails
Cases holding	24	24	...	12	6
Crates holding	...	...	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

A. G. Woodman Co., Grand Rapids, Michigan

DO IT NOW

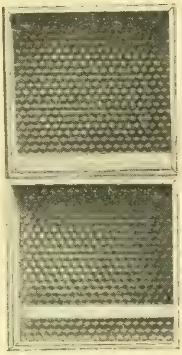
WHAT?

Remember and follow the old adage, "Never put off until tomorrow what can be done today."

Last year many people put off ordering their summer supplies until late. Then they were disappointed in not receiving them as soon as ordered on account of delay, and because many others did the same thing. Now, we have six carloads of fine new stock that has just arrived, and we shall be greatly pleased to attend to any orders which you might wish filled.

Send now for our 1917 catalog with new prices. Prices in every line are soaring high, and if war comes will undoubtedly rise higher yet. Therefore, be prepared for the spring days when the bees swarm, and order now while you have a chance your 1917 supplies from ----

F. A. Salisbury, Syracuse, New York
1631 West Genesee St.



If you use full sheets of foundation in your sections and frames, you are wise, but--you are wiser if you insist on using--

Dadant's Foundation

Why? Read the following:

Dadant & Sons, Hamilton, Illinois.

Dear Sirs:—Looking the accounts over we still have 9 pounds of beeswax to our credit. Could you hold this, as we intend to ship more wax before next season? We will use DADANT'S FOUNDATION **only** as it has proved BEST by TEST.

Your very truly,

Hebron, Ind., Nov. 16, 1914. Van Wyngarden Bros.

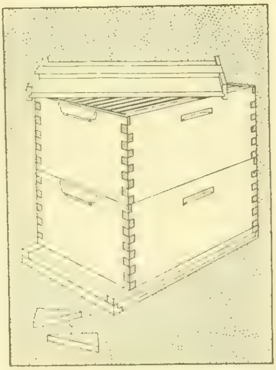
We have many customers who tell us the same thing. Try it yourself and be convinced.

For making Dadant's Foundation we need immense quantities of Beeswax

When you have some to offer, drop us a line and get our prices. We buy at all times and pay highest prices.

BEESWAX WORKED into foundation at reasonable prices. OLD COMBS rendered into beeswax on shares or for cash. Let us do all this work for you and save you time and money.

Dadant & Sons, Hamilton, Illinois

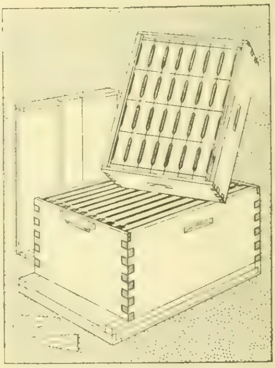


BEE SUPPLIES

We have everything in the supply line and keep an immense stock on hand so as to fill orders promptly.

OUR CATALOG— Lists everything of practical value to the beekeeper. Several new articles listed this year.

Drop us a card and get a copy.



GLEANINGS IN BEE CULTURE

MARCH, 1917

EDITORIAL

WHY THE CHANGE IS MADE

WITH THIS ISSUE of GLEANINGS we inaugurate a new subscription policy—or, rather, return to the original subscription practice as established by A. I. Root at the time of the founding of GLEANINGS, and continued by him for years thereafter. This is the practice of discontinuing all subscriptions at expiration unless the subscriber expressly directs us to continue his subscription to such time as it is convenient for him to pay. This plan supplants our present plan of continuing all subscriptions for six months or a year or even longer, unless we receive the express order of the subscriber to stop his subscription. By the new plan we put the matter of continuance squarely up to the subscriber, stopping a subscription without putting the subscriber to the trouble of writing us if he does not wish GLEANINGS continued.

In a word, it is the better plan of never running one of our subscribers into debt without his definite consent.

The old plan of continuing subscriptions after expiration without order of the subscriber has long been a common custom of publishers. It is continued only because of custom. So many greedy and not-too-honest publishers have abused this old custom and persisted in sending their publications against the will and wish of the recipients of these cheap journals that today the custom has fallen into disrepute. Many proclaim it not only bad business but clearly dishonest to continue (without an order) a subscription after expiration and then to try to collect for it, and we have come to sympathize with this view of the general reading public which has thus been imposed on by greedy and dishonest publishers. At any rate, so very many protests have come to us against continuing GLEANINGS after expiration without an express order so to do that we are convinced that a large majority of our readers wish us to adopt the plan of stopping on expiration. When we say this we would have our readers bear in mind that we have always notified subscribers at the expiration of their subscriptions and asked them to signify if they wished their subscriptions stopped. We have never been in the class of those publications that have continued subscriptions without notifying the subscriber. We never have knowingly or intentionally continued a subscription to any person who we thought was not willing to have it continued. But now we are going to be cleanly and clearly on the safe side of this proposition by *knowing* that our subscriber wishes GLEANINGS continued, either by his renewal or his express order to continue for a definite time.

Is there a reader of GLEANINGS who will not agree that this is the one and only right subscription policy?

* * *

THEY SAY IT HAS HELPED

MAY WE CALL our readers' attention to some things that have recently been said concerning the results of national advertising of honey? These comments come from unprejudiced sources, and must serve to brighten the hopes of all honey-producers.

The *Domestic Beekeeper*, E. D. Townsend, editor, in its January number, says: "No one thing has had as much to do with the advance in price of table quality of extracted honey as the advertising of The A. I. Root Co. They have paid out as much as $6000 for a single-page advertisement in the *Ladies' Home Journal*, followed up with smaller space of great expense. While it is to be expected that they will get their money out of the proposition, this advertising can not but help the demand for honey, which in turn will help every producer of extracted honey to secure better prices with a better demand."

The *American Bee Journal*, C. P. Dadant, editor, in its December number, says: "One of the most interesting talks (at the Illinois convention) was that given by E. R. Root, editor of Gleanings, entitled 'Establishing a Trade Name in Honey.' Our readers know that The A. I. Root Co. has done a great deal of advertising of honey under the trade name of 'Airline Honey.' They have spent enormous sums, paying as much as $6000 for a full-page advertisement in the October number of the *Ladies' Home Journal.* But the increase of demand for honey is well marked."

In a recent letter received from a large producer this was said: "Why didn't your company call on me for honey? I could have spared you one thousand barrels at 60 cts. F. O. B.; but the way you have stirred up the market, 65 cts. F. O. B. would not get much honey of a fine class."

The perfectly apparent fact is that today there is a better market for honey, more competition among buyers, and a better financial prospect before American honey-producers than ever before.

Has not national advertising of honey and the systematic and business-like handling of honey in new ways by big dealers contributed largely to this happy result? We believe that every beekeeper, everywhere, is coming to see this to be the fact.

* * *

BEES AND ALFALFA

THERE HAS been a general impression, partly supported by some investigation work, that bees are not necessary for the proper pollination of alfalfa. While it is possibly true that in some localities and under some conditions a proper seeding can be obtained without bees, the very construction of the blossom itself seems to argue that nature intended that the species *Apis mellifica* should play an important part in the development of alfalfa seed. An item in a recent issue of the *Orchard and Farm,* which certainly cannot be said to be prejudiced in favor of the honeybees, goes to show that they play an important part in the work of pollination.

> It has been discovered that the honeybee is of even more importance to the alfalfa than the alfalfa is to the bee. The wonderful strength and speed of the bees take them long distances for their food, and they have recourse to a great variety of plants. But the peculiar construction of the alfalfa blossom renders it unable to fertilize itself, and its shape makes cross-fertilization very difficult. In the marvelous "balance of good" in nature, alfalfa, like thousands of other plants, is aided in its lease on life by the insect world.
>
> It is not known just how many insects or birds assist this remarkable plant; but the honeybee is the most conspicuous, the most industrious, the most eager, and, certainly, the most useful.
>
> Mr. Coburn, in his book "Alfalfa" says that careful observations have been made of seed pods grown near colonies of bees, and also of those so far from any bee colonies that it was safely assumed no bees had visited the fields producing the pods. In every case it was found that those from nearby fields had from 50 to 75 per cent more seeds than the others, and that they were larger and more perfectly developed. In Colorado and Western Kansas, where bee culture has been greatly developed in recent years, it is found that the alfalfa seed crop in fields nearest to bee colonies is much heavier and of better quality than that of fields but a few miles away.
>
> At the Kansas experiment station a small plot of vigorous alfalfa was covered just before coming into bloom with mosquito-netting supported on sticks. It was, therefore, known that no bees nor other insects could come into contact with the blossoms. Later a careful examination disclosed that the pods which had formed were entirely without seeds.

When any one makes the statement that one can get seed without bees he is probably acting under the impression that there are no bees in the locality. But if there is any place in the alfalfa country where there are no bees, where seed is being grown, we should like to have it pointed out. The beekeepers of the country are watching the opening-up of new bee territory everywhere; and as soon as alfalfa is well under way bees are rushed into that territory.

We have run across localities where fruit and seed growers say they do not need bees, because, they aver, there are no bees there; but in every case we have been able to find them in abundance and proved their presence. The only possible exception would be Pejarro Valley, California; and yet even there we found numerous colonies of bees. The apples grown, the Bellflower and the Downing, are self-pollinating; but no one can deny that colonies of bees scattered in this valley do have some influence. We cannot get away from the fact that nature, when she builds her flowers so they are just right for the visitation of honeybees, does seek or invite their attention. The special construction of the bees and of the flowers themselves shows that she plans that many of the fruits and practically all the legumes require bees for the proper development of the seed or fruit.

* * *

WINTERING PROSPECTS

SO FAR, this has been an old-fashioned winter. In most localities in the North there has been a steady cold—neither very cold nor very warm. There was some severe winter weather along the last of January and first of February; but in all probability there will be no great winter losses, such as we had three years ago, when a warm December was followed by severe winter cold. When bees start brood-rearing early in the winter, subsequent zero weather has a bad effect on bees wintered outdoors. This winter up to date, Feb. 10, has given us zero spells of only short duration followed by a general warming-up.

Bees are wintering well so far as we can learn. Our own are in most excellent condition. While they have been shut in the hives since early in December, and did not have a flight until Jan. 30, they seem to be in fine condition. There was but very little spotting of the hives after the bees came out in the air, and no indications of dysentery.

* * *

IMPORTANT TO INDIANA BEEKEEPERS

ALL BEEKEEPERS and fruit-growers of Indiana should at once write to their senators and representatives in the State Legislature, urging them to support a bill introduced by Senator James Porter of Daviess County, which provides for the reorganization of the Indiana Horticultural Society and the change of its name to the Indiana Horticultural and Apicultural Society, a public corporation of the state. In addition to the beneficial reorganization that the bill provides for, an appropriation of $10,000 is asked to aid the society in the development of horticulture and apiculture. Indiana fruit-growers and beekeepers need large appropriation for the advancement and protection of their business. Wisconsin appropriates annually $8000 for the support of her horticultural society while Indiana appropriates only one-fourth as much. Beekeeping is given no encouragement by the State of Indiana except a meager appropriation for inspection work. Combining the two organizations and securing a larger appropriation with which to carry on the work will do wonders toward increasing the interest in these two very important industries of the state. Foul brood and San Jose scale are rampant, and beekeepers and fruit-growers should insist that they have better protection against these natural enemies.

Indiana beekeepers, write today to your state senators and representatives, earnestly urging them to support this bill that means so much for the betterment and furtherance of your business.

STIMULATING BROOD-REARING IN THE FALL

MR. R. F. HOLTERMANN, at the Ohio state convention, put himself on record as decidedly opposed to stimulating brood-rearing in the fall unless the colonies were below par. He believes a great deal of damage is done by tampering with a normal colony. Feeding always exhausts the vitality of a colony, and the result is that the regular inmates of the hive are worn out and go into winter quarters in a weakened condition, dying some time along in the winter, leaving only a moderate force of young bees which may not be able to resist the cold. The prevailing idea, Mr. Holtermann said, that an ordinary colony cannot winter unless it has a large force of young bees, is a mistake. If a colony of normal strength has a good queen, with plenty of stores, let it alone.

* * *

WINTER EXAMINATION OF BEES

MANY OF OUR large outdoor winter-packed colonies have glass tops over the brood-nest with packing material over the whole. The purpose of the glass is to enable us to take observations by very gently pulling back the packing at intervals during winter. If the work is carefully done there will be no disturbance.

In this connection beginners should be cautioned against pulling open their colonies during mid-winter. If examination can be effected without disturbing the brood-nest, as when the glass top is used, well and good.

* * *

ALFALFA HONEY IN THE EAST

ALFALFA YIELDS HONEY readily in the irrigated districts of the far West when it rarely does so in the East. The statement was made at the New Jersey convention, that alfalfa in a dry season on light land will yield honey when in a wet season on heavy land it will fail to do so. Gleanings would like to inquire whether this condition has been noted by others in the East or West. It is certainly true that alfalfa yields some honey in certain parts of New York and New Jersey; but as a honey-yielder in the eastern states it is generally regarded as a failure.

BEES IN POUND PACKAGES

Bees by the Pound from the South vs. Full Colonies Bought Locally for Making up Winter Losses

By E. R. Root

IT is evident that the business of selling bees in combless packages is growing by leaps and bounds. It is taking the place of shipping colonies of bees and nuclei; and it will probably do away with shipping bees in carlots in their regulation hives on combs. A careful analysis of the express rate on bees in combless packages and the freight rate on colonies of bees in carlots shows that the former is much cheaper and less hazardous. See Gleanings for Feb. 15, 1916, page 136. At one time the movement of colonies in carlots from north to south and back again promised to be quite a business, because it was thought that the same bees could produce a crop of honey in the South and then be shipped north and catch another crop, and perhaps a third crop further north yet, later on. Some successes were achieved when conditions were favorable; but in most cases the movement of the bees by freight extreme distances has been a losing venture.

It is now apparent that the beekeepers in the Southland can in some cases secure a crop of honey and then ship the bees north by express in pound packages so that they can catch a crop of clover or basswood.

After having attended a chain of bee conventions thruout the northern states we ran across numerous beekeepers who have received bees in pound packages from the South about the first of May, built them up into fine colonies, secured a crop of honey, and enough more to put them into winter quarters in fine condition. This has been done, not once but many times. In a few cases a single pound of bees received in the North about the first of May has built up to a full colony, secured a surplus of 100 lbs. of extracted honey, and then went into winter quarters as a full-fledged colony with plenty of stores. It is evident that the pound of bees and a queen in these cases paid well on the original investment. Others who have secured bees in lots of two and three pounds later in the season, got a crop that more than paid the first cost.

The pound-package business by express northward early last spring was so successful that some beekeepers were seriously considering the question of letting their old bees die off after they had secured a crop of honey, extracting the combs clean, putting away the hives, combs, etc., then filling them again the following spring with bees in pound packages from the South.

Said one large producer in Canada who does not wish to be quoted as yet, "I have 25,000 lbs. of fine clover honey in my hives where bees are now wintering, and this honey would now net me 11 cts. a pound. I am almost beginning to feel that I could extract this, take the money, and buy bees in pound packages next spring to put on my combs.* No, I will not do it just now; for may be I cannot buy the bees when I want them at a low enough price."

Beekeepers who furnished bees in pound packages last spring were swamped with orders, and many northern beekeepers were unable to get deliveries. Anticipating this difficulty, one beekeeper is tentatively considering the question of going south this winter and buying up bees, run them for increase, and then ship the bees back to himself in his northern home in combless packages. He would leave enough honey in the hives in the South to take care of the queens, brood, and a few bees, and put them in charge of a man to build them up for the next season.

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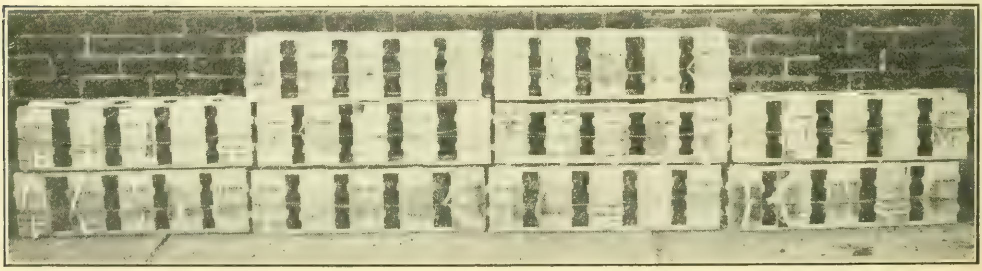
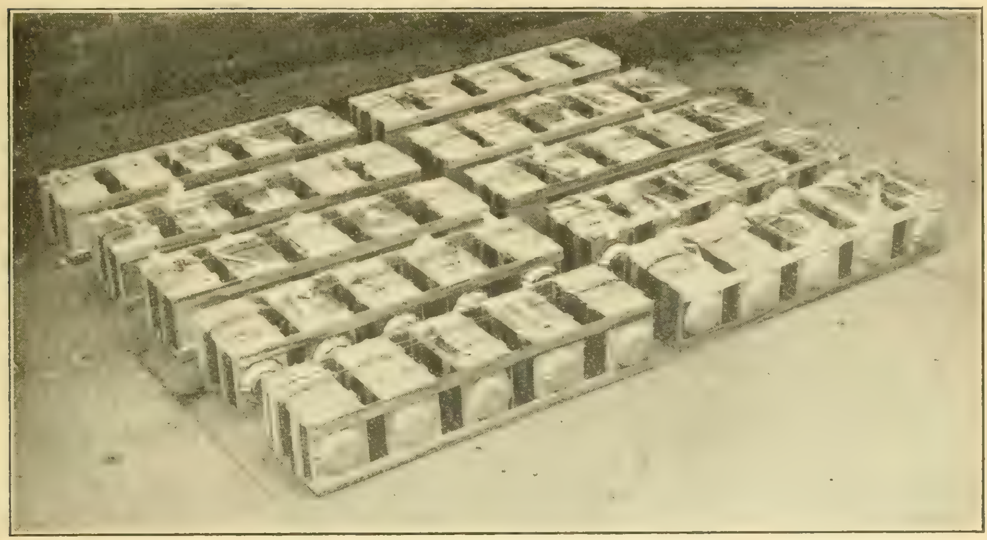
* This man has from 40 to 50 lbs. of honey to the hive — call it 40 lbs. This would mean $4.40 This amount invested in bees and queens in a combless package would go a long way toward a new start; but it would hardly be enough to make the kind of colony by weight that the 40 lbs. of honey would give.





Fifty pound packages of bees ready for shipment.

An effort is being made now to get bees in pound packages admitted to the privileges of the mails. They could be sent by parcel post in many cases cheaper than by express. If we could once get Uncle Sam to enter into competition with the express companies the express rate on bees would drop at once.

The advantage of combless bees by express over colonies in hives on combs by freight is in the saving of time. The least time that a carload of bees can be moved by freight from the extreme South to the North is a week, and usually longer. The journey is hard on the bees, and the man who goes with them must, under the present ruling, pay his own transportation. Bees can go by express from south to north in about three days, or considerably less than half the time by freight.

There is another distinct advantage and that is, combless bees cannot carry brood diseases. This of itself is very important.

In the early part of the year, before the weather becomes hot, the bees can be sent in pound packages with practically no loss; but during July and August, when the weather is extremely warm, there may be a 50 or even 75 per cent loss of bees in pound packages, altho our loss in average distances in hot weather has not exceeded 10 per cent. However, we have not been enabled to get bees in combless packages from the South in hot weather in satisfactory condition after arrival. On an average we have had something like 50 per cent loss.

But there is no difficulty, providing one gets his bees from a reliable shipper, of getting them in pound lots in *the early part* of the season; and that is just the time of the year when bees will be moved, and when, too, the largest returns can be secured.

We anticipate that the following year will see the largest movement of combless bees from south to north that was ever known. Gleanings offers a suggestion to those who are furnishing bees in pound lots, to be prepared for a big trade; and while you are about it, make the price high enough to include all expenses, replacements, and advertising.

If the combless bee-package ever gets to be a success (and it looks like it now) there will doubtless be legislation, both federal and state, prohibiting the movement of bees on combs. If every one would use the bee-cage candy made of invert sugar instead of honey there would be absolutely no danger of transmitting disease, either in pound packages or in ordinary mailing-cages for the transmission of a queen, with a dozen or so attendants.

Later.—About the time that the above was written, the following questions were submitted. In order to get the benefit of several who had had experience along the lines suggested, we sent copies of the questions to a number of representative beekeepers. Their replies follow the questions on the next page. To the different views expressed we may add this: The fact that many northern beekeepers have bought bees by the pound in the past and are planning to buy more in the future, is the best proof that the practice is a paying proposition.

WILL BEES FROM THE SOUTH GIVE AN EARLIER START?

1. Can an experienced beekeeper, starting anew, near Washington, D. C., have more populous colonies for the white-clover harvest at no more expense, by securing young queens and pounds of bees from the extreme South, than by buying strong colonies with heavy stores in his neighborhood as early as their condition can be ascertained—the object being to have all colonies every bit as strong in May as if the apiary had been established for years? In either case, drawn-out combs or full sheets of foundation would be added to the brood-nest and they would not lack at any time, up to the time of the honey harvest, either an abundant supply of thin syrup or damp or raw sugar or bee candy to sustain brood-rearing. They would also be kept warmly covered with top packing and tar-paper covering, but with plenty of room inside. It is assumed that as bees in the South would have commenced to breed earlier than those purchased here, there would be a larger percentage of young bees, and they would dwindle less and build up and increase faster under stimulative feeding.

2. Could southern bees, shipped to Washington, be made equal to full colonies secured in the neighborhood at a considerable saving in cost?

3. In buying bees from the extreme South, would it be best to secure one, two, or more pounds of bees with each queen, or would it be better to buy three or four frame nuclei, leaving out all consideration of the foul-brood question?

4. How early should southern bees be shipped to Washington? and how early must one commence stimulative feeding with southern bees provided they have plenty of bee candy in reserve?

5. How early is it necessary to commence stimulative feeding of the neighborhood strong colonies provided they have plenty of stores?

6. After filling the single brood-chambers of the southern bees with combs of brood, how should the second brood-chamber full of drawn-out combs be added? Should the chambers of empty brood-combs be put underneath, or one half of the brood put above the other half? if so, in the center or next to the sides? If brood-chambers are added (or hive bodies) full of frames having full sheets of foundation, should they be arranged differently from the drawn-out combs? Why?

7. Is it safer to feed raw or damp sugar or candy early in frame-feeders than to give syrup once or twice a week? How early is it advisable to feed warm syrup every night to push brood-rearing?

8. Would it not be well to use a different method to build up the strong colonies with heavy stores, bought in the neighborhood, to cause them to fill two chambers with brood before the white-clover flow? What would be the difference?

9. What is the comparative cost of two lots of colonies bought in the spring, one lot from the extreme South and the other from the Washington neighborhood? Of course, after the main honey-flow the queens may be replaced by those raised in large colonies from a record honey-producing strain acclimated to northern winters, and possibly of the kind that will keep two or three brood-chambers filled with brood at the desired time. SAMUEL CUSHMAN.

Baltimore, Md.

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THE OPINION OF A SOUTHERN BREEDER.

Question 1. In case of one-pound clusters of bees I would say no. Two-pound clusters put on combs containing plenty of honey about April 20 would probably be as strong by May 30 as local colonies. On the other hand, if put on comb foundation and the bees were fed to produce combs, I should say no.

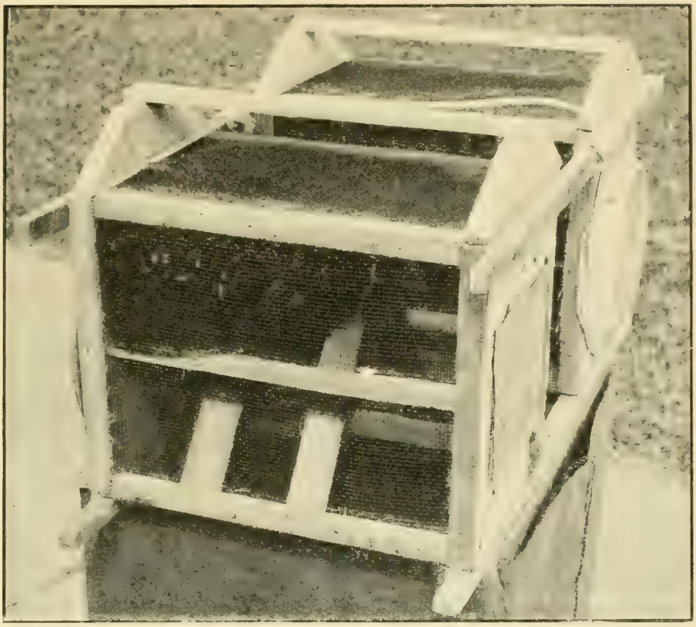
Question 2. Perhaps not. But the question of local prices for colonies, the quality of hives, frames, combs, and queens should be considered.

Question 3. If all of the surplus honey comes early in the season it would be best to buy two-pound packages. If the honey season is late, possibly one-pound clusters would get as much honey. It is presumed that there are combs for the above. If there is only comb foundation it would be better to buy three-frame nuclei early, or two-pound clusters without combs at the commencement of the first light honey-flow.

Question 4. The bees should be bought as early as conditions will permit in order that they may have all the time possible to build up. Perhaps April 18 is as early as they could be obtained from the South. The bees should be fed as early as the weather warms up enough for them to take the syrup. Care should be taken not to waste feed nor to permit robbing to get started.

Question 5. It is not wise to spend too much energy and money in giving bees something they do not need. It is hard to improve on honey in the comb as a stimulative feed.

Question 6. One comb of sealed brood



W. D. Achord's cages have two or three times the ventilation of the regular cages for holding the same number of bees.

should be taken from the brood-chamber, all the other combs of brood being drawn together, and an empty comb put into the space left. The comb of sealed brood should be put in the center of the second story, the rest of the space being filled with comb.

If desired, two combs of sealed brood may be taken from the brood-chamber and replaced with frames of comb foundation, a comb of brood being placed between the foundation. The brood-chamber should then be left as a one-story hive. The two combs of brood removed should be put in the center of a second story, the rest of the space being filled with combs of foundation. This second story should then be put over a brood-chamber that is full of brood and bees. In ten days two combs of brood may be taken from this two-story hive and replaced with frames of comb foundation. These two combs of brood should be put in the center of an empty body and the space filled up with frames of comb foundation, this body then being placed over the brood-chamber from which the two frames of brood were taken ten days previous. These colonies should not be allowed to suffer for honey.

Question 7. I prefer warm syrup in frame feeders supplied as early as the bees will take it up without much delay.

Question 8. If any building-up were necessary I would use the same plan given in question 6.

Question 9. Not knowing the cost of full colonies of bees in any given locality, I can not compare prices. One would have to consider the prices of bees by the pound; also the prices of hives and fixtures. In buying bees by the pound, and new hives and supplies, one secures a uniform desirable outfit which will give pleasure and satisfaction as well as profit. This is not ordinarily the case when buying colonies scattered around locally.

This question, 9, seems to imply that certain queens are acclimated to northern winters. The quality of a queen is determined by the strain of the bees, the method of producing them, and nectar conditions, assisted also by atmospheric conditions. Good and poor queens are produced north, south, east, and west. Generally speaking, because of the long period of warm weather, bees and queens can be produced cheaper in the South. W. D. Achord.

Fitzpatrick, Ala.

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A NORTHERN CUSTOMER'S EXPERIENCE.

Question 1. In the spring of 1916 I tested side by side five eight-frame colonies bought at home and five five-pound packages of bees bought in Louisiana. My conclusions are that the colonies bought at home paid the best; but the five-pound clusters of bees were put on sheets of foundation while the full colonies had drawn combs well filled with honey of good quality. All ten arrived at my home in Illinois on May 1, and were fed ¾ of a pound of thin syrup daily for the next 30 days. All ten had good queens, and all received like treatment. I could see no difference at the end of the time in the strength of the colonies. They were run for bees, and all were used in June for nuclei shipments, so there are no figures available as to honey-storing. I consider packing on *all* sides of great value, and tar paper, on top packing alone, worthless.

Old colonies did not dwindle more than others. I assume that the bees in the packages had already largely seen field service in the South before shipment.

Question 2. I do not think that package bees can be made equal to bees purchased at home at any saving of cost whatever, provided not more than $5 per colony is paid at home. I am assuming that the packages are figured at 90 cents per pound in lots of 100 or more pounds.

Question 3. Assuming that Washington, D. C., has about the same spring climate as Chicago, Ill., bees should arrive not later than May 1. Fruit will then be in bloom, and the clover flow will start by May 25, normally. I do not think less than *four* pounds of bees should be bought for each eight-frame hive, especially if they are to be put on full sheets. The larger clusters can do far more in the cold nights of early spring. I do not advise buying nuclei on combs to ship as far as Washington or Chicago, as express charges are prohibitive.

Question 4. May 1. Start stimulative feeding from the day the bees arrive, and keep it up not less than one pint daily. Candy is a poor stimulative feed compared to liquids.

Question 5. My experience in feeding the ten colonies last spring in addition to the stores of their hive (in the five bought at home), proves to my satisfaction that it does not pay to stimulate by feed where good stores are in the hive.

Question 6. I think the second story should always be added above, especially if it contains full sheets of foundation. Never, under any circumstances, divide the brood in the spring in the locality of Washington or Chicago. The temperature last spring went down to 15 degrees F. about May 10. A queen that is not laying well in the second story by May 25, even if full sheets of foundation were given, and if not much feeding is done, is absolutely no good, whether in a full colony bought at home or in a five-pound package.

Question 7. Sugar and candy are not good for stimulative feeding compared to liquid feed. However, I must admit little experience feeding candy or sugar. The feed should always be given over the cluster in early spring, preferably with the pepperbox feeder and the cluster, feeder and all covered well with several layers of cloth, such as burlap. I am sure daily feeding is preferable to weekly or semi-weekly feeding.

Question 8. The only difference I would make with full colonies bought at home would be, not to feed for stimulation, and to do nothing to the bees except, possibly, to score some of the sealed honey next to the cluster once or twice a week. Doolittle's "millions at our house" still stands.

Question 9. Here are some comparative prices: Full colony bought at home.

To 1 colony (two supers, eight-frame)	$5.00
To ½ pound sugar daily, 30 days, at 3½ cents	.50
Total....	$5.50

Pound packages.

To 5 pounds of bees at 90 cents per pound	$4.50
One untested Italian queen..........	.75
Express on five-pound package from Louisiana	.75
Eight full sheets foundation, frames etc.	1.00
To sugar, same as above............	.50
Total....	$7.50

This charges no labor and expense on *first* body only, figuring the beekeeper has the empty hive to start with for the bees in the combless package. The sugar was some damaged in shipment, and was a bargain at 3½ cents.

Manager, Quality Hill Apiaries.

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A CHANCE REPORT OF TWENTY POUNDS OF SOUTHERN BEES.

In February, 1916, I ordered 20 lbs. of bees from a breeder in the South, with an untested queen with each pound package. The bees were shipped April 20, and they arrived here April 25 in fine condition. It happened to be very cold at that time so I had to keep them in the house for three or four days before setting them outdoors.

On their arrival I immediately put them in the hives they were to occupy, leaving only four frames in the hives—two of sealed honey while the others were empty combs. It was so cold that the bees did not leave the cages very readily, so I shook them out of one of the cages. They were so hard to get out that I decided to let the rest come out themselves.

Five or six days after they had been outdoors a warm day came so that I could look thru the hives to see whether the queens had begun to lay. I found that two of the queens were dead—at least they were gone—so I wrote for two more queens with bill for same. They came by return mail, but there were no charges.

Well, the weather continued wet and cold all thru April, May, and June; but every time it warmed up the least, out the bees would come for work. I never saw any other bees work when the weather was so cold and wet, and the queens kept right on laying, cold or no cold. On June 19 one of them cast as large a swarm of bees as I ever saw.

Clover as well as everything else was late. It did not begin to bloom till about June 20; but I never saw its equal. In July the weather was perfect.

The fall before, I put twenty-five colonies in winter quarters. The following spring I had twelve strong colonies—nine weak ones and four that were dead. By July there were just fifteen of them, and only half of these were strong enough to be working in supers. Now, it seems to me that if I had killed the twenty-five colonies in the fall, and extracted the honey out of eight of the frames of each hive, and saved two frames of honey to give to the bees to be purchased from the South, I would have been money ahead. Bees sent from the South are all young and hardy, while the ones we winter thru are old and die off rather fast in the spring.

Aitkin, Minn. WM. CRAIG.

* * *

A VERY SUCCESSFUL EXPERIENCE.

I had heard considerable discussion on this subject—some favorable and some otherwise, so I decided to try the experiment for myself. For me it has been a successful venture, and my experience has led me to believe that no professional beekeeper who may have good hives and equipment on hand can afford to allow them to stand idle during the season. Of course I realize that all who order bees in combless packages from the South may not have as good success as I did, also that I might not have as good luck another time.

Here are some of the things that contribute to the success or failure of a venture of this kind. First, time of arrival; second, buying from a reliable man. It is also necessary to have a good stock of bees with good queens.

In view of the complaints I have heard I believe one should be careful about giving a large order to an entirely new man unless he can furnish satisfactory reference guaranteeing pure stock and safe arrival. Early last spring I wrote to a man in the South who was advertising Italian bees in combless packages. This led to my ordering 25 one-pound packages with untested queens included, the price being $2.50 per package. These were to be delivered between the 1st and 10th of May, safe arrival guaranteed. May 10 arrived, but no bees. I was anxious for them to arrive, as we all know that time at this season of the year is precious to the beekeeper. About that time I received a letter from the dealer advising that he would ship them in a few days. As it turned out it was well that they did not arrive at the time stated, as it was a very late spring and we had a snowstorm on the 10th of May.

Well, the bees arrived on the 20th, and the weather was warm and fruit-trees were just coming into bloom. They were shipped in wire-cloth cages with feed and water, and they arrived in good shape with but few dead bees. The cages containing the queens were fastened to the top of the packages so the bees could cluster around the cages. Twenty of these I placed in hives on frames of empty combs, a few of them containing a little honey. Some were hives in which bees had died in the winter. As the weather was warm the bees went right to work on fruit-bloom, and I did not find it necessary to give any feed. As an experiment I placed the other five in hives containing full sheets of foundation, supplying no feed.

In a day or two I found all the queens laying but two, which were missing. I wrote to the dealer, and he immediately sent me two queens to replace those that were lost. This was a great satisfaction to me, as we all like to have a dealer do as he agrees.

The nuclei built up fast, and on June 25 I gave comb-honey supers to the 20 placed on empty combs. The clover flow came about the same time. The bees went to work in the supers, and about July 5 I found it necessary to add another super on all but two of the 20 placed on empty combs. The other two swarmed—one July 4, and the other the 6th. As I had clipped the queens I caged them and placed the cages containing them in new hives containing full sheets of foundation. After removing the old hives I placed the caged queens on the same stands, and the bees ran in and took possession of their new homes and seemed to be well pleased with the change, and went right to work. Fifteen colonies finished two supers each, and three of them finished three supers each. The other five that were placed on full sheets of foundation made very little surplus honey, but built up well and took in plenty of honey for winter stores. The two that swarmed also built up well for winter.

From my investment I have 27 colonies in good condition for winter, and enough surplus honey to pay the first cost of the 25 packages of bees. Figuring the 27 colonies at $5.00 each gives me $135 for my work, besides the experience, which is worth some-

Continued on page 223.

FROM 1 COLONY TO 532

A Few Methods I have Adopted, and Conclusions I have Reached After 22 Years with the Bees

By Ira D. Bartlett

TWENTY-two years ago I started with one colony and today have 532, with honey-houses, supplies, and a full equipment for their operation. I lived in town near the head of a lake, and kept the bees at home for a few years; but in the spring the bees would spot the neighbors' clothes on the line, so I decided to move them about a mile south, where my father owned twenty acres of land. I had previously noticed that the bees flew southward for their nectar; also that they crossed this lake. This move resulted in a larger crop of honey, due to being closer to the pasturage and to the saving of many bees that were lost in crossing the lake, in spite of the fact that it was not very wide.

I wintered my bees from the start in a long winter case in which the bees were placed and packed. With the long cases which were first used, in which the colonies were placed side by side, all facing the same way, I also used the square case containing four colonies, two facing the east and two the west. The long cases were discontinued in favor of the four-colony cases, the latter proving the better in every way. I learned that the bees wintered better when packed for winter early, before the fall rains set in. This necessitated early feeding for winter. Perhaps the early feeding has something to do with the successful wintering. I have always used the Miller feeder, and fed the whole amount required at one feeding. At first I did not have enough feeders to feed all the colonies in one yard. There was some robbing, and I always lost some colonies. I tried feeding all colonies at one time. This helped somewhat, but not until several seasons' experimenting did I hit upon the right way to feed to avoid all robbing. By my plan described below, even tho there is no honey coming in at all, the bees will, as a rule, pay no attention to syrup spilled on the covers or ground.

The entrances are contracted about the time the white honey-flow ceases; the feeders are placed on the colonies to be fed, each hive having been weighed, and the amount to be fed marked upon the cover. The feeders are left for a day or two if possible, so that the bees become familiar with their presence, then several tubs placed at one side of the apiary are filled with a syrup composed of about one part of sugar to five of water, thoroly stirred. Floaters of thin strips of pine are placed on top, care being taken to fix these so the bees will not drown. Usually about a day is required to get the bees all working nicely on the syrup, then the feeders are filled with the required amount of syrup for winter.

The tubs must be filled daily until all the syrup in the feeders has been taken down, when the feeders may be taken off (I use escape-boards in doing it), and the outside feeding discontinued. Everything following will be absolutely quiet, as tho a big honey-flow had been on. This is one of the best things I have learned. I use this plan even where neighbors have bees close by, for my bees get more benefit than the others do.

Weighing-machines of various kinds are of absolutely no value. My plan is to take off the cover, pull the canvas quilt back, quickly judge the number of bees, kind of combs, etc., and then judge the weight by lifting the back of the hive only. I can make a better estimate of the amount to be fed than by placing the colony on scales; and I can do the work in one-tenth the time. The main thing is to be sure to give a plenty. My average feed per colony, in excess of what they have, one year with the other is 12 lbs. of sugar per colony for winter, which makes 18 lbs. of thick syrup. You say that you do not use the canvas quilts. I would not do without them, as they enable me to make easy and speedy examinations.

I employed this same method of outside feeding one spring to build up some forty very weak colonies that I had taken home to the cellar to winter on account of their being so weak, and by the opening of the white flow they were in better condition and gave me more surplus honey than the other colonies that were in good shape to start with in the spring, and therefore received no special care. In this case I used two tubs and reduced the feed to seven parts of water to one of sugar, the bees using it apparently as a watering-place; but the results were surprising.

I produced both comb and extracted honey at first, succeeding well; but wishing to extend my

Feeding very thin syrup outdoors with thin boards for floats.

bee business I was confronted with the swarming problem. I studied the various conditions that were calculated to cause swarming, and worked out a system that has proven very successful in the production of extracted honey. During the season of 1916, in this vicinity, every one's bees swarmed, and continued to swarm, except mine, so I am pretty sure the system is all right.

HOW I CONTROL SWARMING.

I use full sheets of comb foundation in the brood and extracting frames, to avoid the raising of drones in large numbers, which is one of the causes of swarming.

I increase the size of the entrances just before the honey-flow opens, giving plenty of ventilation. I give a super of combs, cut deep when extracting, so as to be just right for the queen to lay in, just as soon as the bees cover the combs in the brood-nest nearly to the outside, giving the queen abundance of laying room. I give another if required before July first.

July 1 a queen-excluder is placed between the brood-nest and supers. July 4 or 5 the queens are easily found, and placed below the excluder if they are not already there. This date is selected for two purposes: First, the brood-chamber at this time is usually right for the queen, she having been above for several weeks; and the honey-flow being at its height, the bees naturally fill cells with honey as soon as the brood emerges. Thus conditions are still normal, the queen uncrowded, and there is plenty of storage room. Yet if it is a very strong colony an additional super is given at this time, and still another later if required, putting a final check on swarming. The other reason for selecting July 4 or 5 to put on the excluders is that by the first of August all brood is out of the supers; and as the white flow has just ceased, the honey is immediately taken off with bee-escapes.

The above plan is figured out for this vicinity and for our particular honey-flow. In other localities the dates would have to be changed somewhat.

TAKING THE HONEY OFF THE HIVES.

As I use the queen-excluder I can easily get the bees out of the supers with the Porter bee-escape. It takes but a fraction of a minute to insert one. I use enough of them for the whole apiary, taking off but one super at a time with each escape.

To economize in time, all honey is taken off before extracting. I heat the honey in the extracting-room with oil-stoves. This makes uncapping and extracting easy; and as there are no bees in the room it is much more pleasant working.

In time the tops and bottoms of brood and extracting combs become more or less covered with propolis and wax, and burr-combs will be run from one comb to another. In the spring, when the colonies are light, there is no honey in these burr-combs, and they are easily cut out and the tops of the brood-frames scraped clean, making it much easier to work in the hives later on. I find it very profitable to do this, and to clean all extracting-combs likewise. The amount of wax the scrapings contain will pay well for the time expended. What appears to be clear propolis is about half wax. This work is hard the first year; but after that it is easy.

WHAT TO WEAR IN THE BEEYARD.

Do you wear black in the apiary during the hot weather? Try wearing a pair of white overalls and jacket and note the comfort. I have learned that the wrist is a bad place to get stung, and I avoid it entirely by wearing a sort of sleeve protector made from 8 or 10 oz. canvas which extends from the palm of the hand to the elbow. I make it to fit snugly about the palm with a slit for the thumb. I fasten it with a safety-pin to the sleeve.

A PLAN WORTH HUNDREDS OF DOLLARS TO ME.

Shortly after setting out the bees at one outyard where they were wintered in the cellar, I found that they had drifted considerably, and that there were nearly one hundred colonies that had but a handful of bees each. The bees in this apiary had wintered very poorly, and only a few came thru with many bees; but as a rule the queens were good. I looked them over by examining from the top only. Where I was sure they would not hold out for a little longer until it warmed up, I helped them by giving a comb of bees from the strongest colonies; but I lost quite a few at that. Just as soon as it was warm, and pollen was coming in freely, I examined every colony, marking the extra strong and extra weak ones, and also the medium strong and medium weak ones. The average colonies I left as they were. During the day, when the bees were flying, I exchanged the places of the extra strong with the extra weak if the weak colony had a good prolific queen, and also exchanged the places of the medium strong with the medium weak colonies. This had a tendency to equalize the number of bees in the colonies. Altho the real weak ones appeared the stronger for a short time, the strong ones with the extra brood soon caught up. A little later I made another shift as above, and equalized them again. The result was wonderful; and, altho I expected little if any surplus, I got 100 lbs. to the colony. After seeing the results from the first exchange, I worked it in the other yards with equal success.

Try wearing white overalls and jacket in the apiary.

After exchanging the weak and strong colonies, in a few days I examined them to see the result. The once strong colonies had but few bees, and I suppose what were left did double duty in caring for the brood, as did also the young when it emerged, for they cared for the brood all right. Here was my only fear, as the queens were not hurt a bit.

In the weak colonies that had good prolific queens, with the aid of the extra bees these queens laid to their limit, and in a few days gave the bees all they wanted to do—at least it so equalized the bees that they were all given employment in rearing brood, and the result was that nearly every colony was in very good condition for the harvest. The honey-flow being somewhat late helped; but still I am sure I benefited much. I am going to test the plan again next season. My Ford car makes short cuts between yards, and carries a wonderful lot of supplies. I expect to use a trailer next season. I believe it pays to perform one's work systematically, completing one job before starting another, and doing each little operation the same each time, so that it becomes automatic. I use every device possible for expeditious work, always use nailing-forms for nailing up hives, covers, frames, cases, etc. It makes the work easier, and I accomplish so much more.

I try to keep my apiaries spick and span, and my honey-houses in a presentable con-

Continued on page 223.

THE ROOT WINTER CASE

A Design Perfected by C. H. Root, of New Jersey, whereby there is no Loose Packing Material

By E. R. Root

ONE would almost think that the title as above given would indicate that the A. I. Root Co. had designed a new winter case; but the fact is, the case in question is the invention of C. H. Root, of Red Bank, N. J., who is in no way connected with the Roots at Medina.

While we were attending the New Jersey convention a number of different beekeepers mentioned the Root winter case. At first we were a little puzzled to know what they were referring to. Finally it developed that it was not a Medina affair but the invention of C. H. Root, one of the largest honey-producers in New Jersey, and an enthusiastic beekeeper—a man of an inventive turn of mind, and a mechanic withal.

After a spirited discussion on wintering and winter packing, several beekeepers asked if we had seen the Root winter case. So much was said in its favor that we were interested and asked to see it.

Mr. E. G. Carr, the secretary, said that at the New Jersey experiment apiary he had had a number of these Root cases, and suggested that those of us who were interested might go out to the experiment yard the following morning, which we did before the morning session was called to order.

The subjoined illustration will give the result of our visit. Fig. 1 shows Mr. C. H. Root standing back of his winter case as dissected and removed from the right-hand hive in the foreground. Fig. 2 shows a closer view of the double-walled case that surrounds the brood-nest. It will be noted that it is made of 3/8 lumber, with a recess cut out of the front to provide for an entrance.

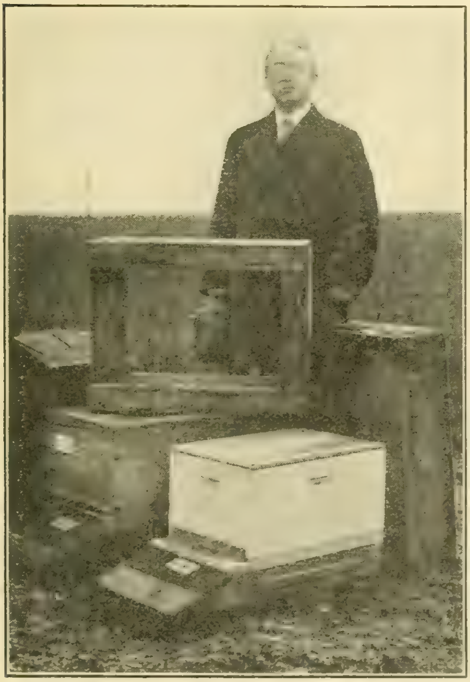


Fig. 1.—C. H. Root and his winter case.

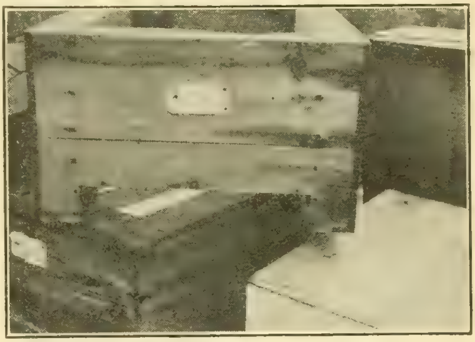


Fig. 2.—Detail of the C. H. Root winter case.

Mr. Root is a thoro believer in winter packing, even in as mild a climate as that of New Jersey. To that end he not only regards it as important to have the sides and top of the hive packed, but even the bottom as well. The single-walled hive rests on a hive-stand which is filled with packing material when the hive is set on top.

The case surrounding the brood-nest as shown in Fig. 2 is double-walled with three-inch packing between the walls. The one shown in the illustration is made up of cheap lumber; and while it is not of the exact detail recommended by Mr. Root, it shows very well the principle. The ring that surrounds the brood-nest makes a nice and close fit; that is to say, there is just clearance, and that is all, between the hive and the surrounding case. It is deeper than the inner hive by about two inches.

It will be noted in Fig. 1 that there is a cleat nailed on the side of the hive-stand. There is supposed to be a corresponding cleat on the other side and one in the rear.

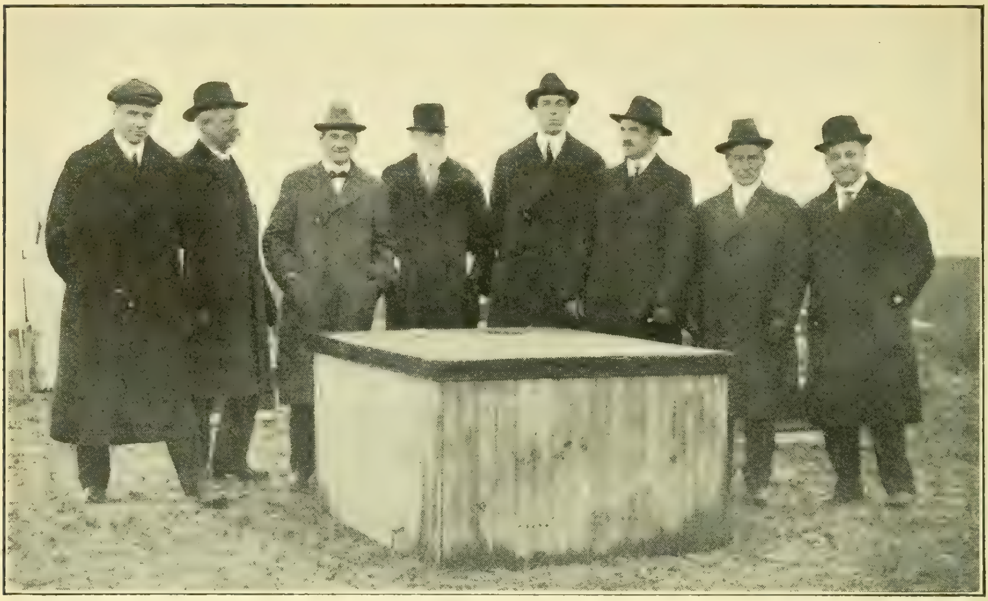


Fig. 3.—A few New Jersey beekeepers. From left to right, R. D. Barclay, C. D. Cheney, J. L. Dubree, W. A. Veseillus, Corsom Poley, E. G. Carr, C. H. Root, and W. E. Thorndyke, of New York.

This cleat should extend clear around the hive-stand without a break except in front. The double-walled case is then slid down over the hive resting on the above-mentioned cleats.

The recess in front provides for an entrance; and when the case is in place its top is flush and even with the top of the hive inside. A double-walled cover that telescopes over the winter case gives the necessary protection on top. It will thus be seen that the colony has packing on top, bottom, sides, and ends.

When it is necessary to put the bees into winter quarters, Mr. Root explained that he can prepare a whole apiary in a very short time.

The only objection to this style of winter case is the expense and the necessity of having the hive and the outer case of such an exact size that the one can be slid over the other without sticking or catching.

Continued on page 223

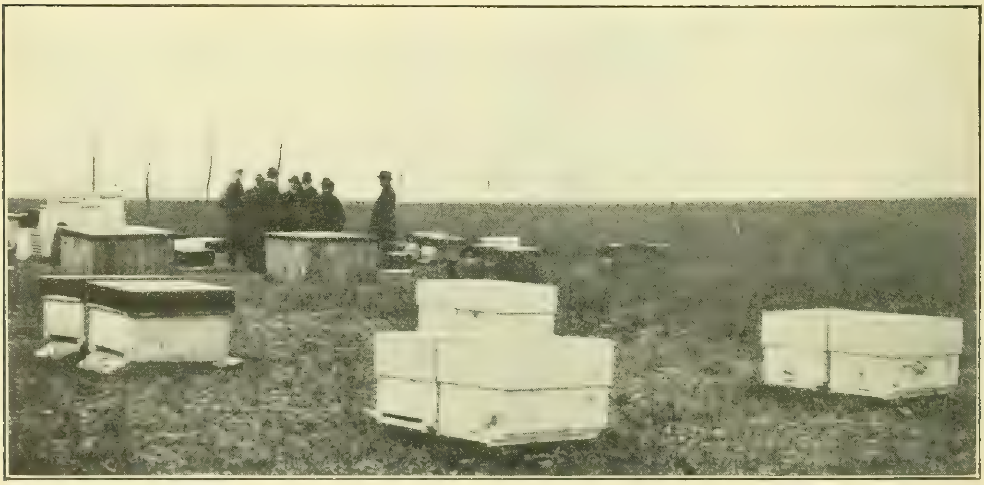


Fig. 4.—The apiary at the New Jersey Experiment Station.

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

Mr. Albert Szukiewicz, from Brazil, desires me to answer the following questions:

"How do you tell when bees intend to supersede their queen, from swarming indications?"

When bees have the "swarming fever" it generally comes near the beginning of some copious flow of nectar, with the hive comparatively well filled with bees of all ages, combs filled with brood, and many young bees emerging daily. Queen-cells without stint often 15 to 20 are started with eggs and larvæ in them—while the bees cluster quite thickly over them. Most of the colonies in an apiary, which are strong enough in bees, will prepare for swarming at about the same time, or within 20 days, so that we have what is termed the "swarming season." A case of supersedure is liable to happen at any time when there is some brood in the hive, but more especially at the end of the main flow of nectar, when bees first show a disposition to rob, as at this time, after the stress of the breeding season is over, queens may fail rapidly. In a supersedure case the bees rarely start more than two or three queen-cells, and generally only one at first, and rarely have more than from two to five, the last one being only just started with an egg in it, while the first one may be fully ripe. In a case of supersedure the bees pay very little attention to these queen-cells except to supply them abundantly with royal jelly, allowing the mother-queen to go about them as she pleases; and often the first one emerging becomes fertile and laying, with the mother doing the duties of the hive as far as she is able.

"In your book, Scientific Queen-rearing, you speak of taking a laying queen from a nucleus, having her between two combs, taking bees and all, and, after taking out a failing queen which you wish to supersede, and two combs from her hive, set in the two combs of bees in place of the two removed from the full colony, thus being sure of a safe introduction 49 times out of 50. Would not a battle ensue unless some means were used to give all the same odor?"

I have never known of such a thing. If in time of a robbing craze, there might be, unless precaution were taken to do this work at about sunset, or at a time when the bees were mostly quiet so far as prowling about was concerned.

"In Scientific Queen-rearing you tell of rolling a virgin queen in honey and dropping her in a nucleus or any colony in which you find sealed queen-cells, and, in a week or so, you find such queen laying. Are sealed queen-cells a proof that a colony is queenless?"

Not where a colony is preparing to swarm; but, outside of the swarming season, sealed queen-cells are good proof that a colony is queenless in so far as a *laying* queen is concerned, or that they are about to supersede their queen, when in either case they will, nine times out of ten, accept a queen dropped in at the top of the hive, between the combs, when rolled or covered with a spoonful of honey.

"On page 85 of the same book you tell how to make a cage for introducing queens so it will stick to the side of the hive with two nails. Could such a cage be purchased from any supply house?"

I doubt it. If you will get out the different pieces as there described, and then put them in place, you should be able to make the cage from the description there given.

"On page 86 you tell of shaking the bees of a colony off from all the frames of brood which they have, and giving said frames to another colony. Should it happen that this other colony had all the brood they could care for or cover, would not this extra brood given perish?"

As most of this work with queen-rearing and changing of queens is done during the mild or warm months, there is little danger from brood perishing when properly handled. Put a queen-excluder on top of a moderately prosperous colony, and then put a hive of brood on top of the excluder, and see how soon the bees from below will spread out so as to care for the whole. It is rare that any brood ever suffers from a prime swarm leaving the parent colony, even should it turn cold just after, altho three-fourths of the bees go with the swarm.

"On page 120 you tell of contracting hives by means of a division-board to suit the size of the cluster at the opening of the working season for the bees, and say, 'Honey enough is provided to keep them for two weeks.' How much is that?"

I there speak of colonies that do not

FROM THE FIELD OF EXPERIENCE

occupy five spaces between the combs on cool mornings the middle of April. A colony strong enough to occupy only two spaces at that time can, on this contraction plan, be built up to good strong colonies in the fall, and the three and four space colonies be brought up to where they will swarm or store quite a surplus. The two-space colony should have a frame having three pounds of honey given them besides their two combs of brood; the three-space colony five pounds, and the four-space colony eight pounds, putting the frames of honey next to the side of the hive furthest away from the entrance. Care should be used in this matter; for if these weak colonies are given more honey than they can protect from robbers, harm is likely to result.

"In your book, Management of Outapiaries, page 27, you speak of queen-cells having larvæ in them from one to four days old. How do you recognize the age of royal larvæ?"

The same as with worker larvæ up to when they were three days old. All larvæ, so far as I can discover, are, to all intents and purposes, alike for the first three days, no matter whether they are swimming in royal jelly or fed in worker cells. By noting the time when a larva hatches from the egg, and then looking morning and evening till the fourth day, you can carry the size in your mind sufficiently for all practical purposes.

"On the same page as above, you speak of a comb having a 'ripe' queen-cell on it. By what do you recognize a ripe queen-cell?"

When a queen-cell is ripe, or nearly so, the bees gnaw the wax off till the cocoon spun by the embryo queen shows at the end of the cell. As long as the wax at the end of the cell remains intact, the royal occupant will be white and soft, the eyes not even having colored. Generally the wings are being formed about the time the wax is removed, and the development of the wings is not accomplished until a few hours before maturity.

"What do you do where there are two or more such ripe cells on a comb?"

If cells are scarce and valuable, where there is more than one on the comb to be given to a nucleus or queenless colony, the surplus should be cut off and put in queen-cell protectors for use where needed. If they are not needed elsewhere the bees will destroy all but the queen they wish to keep.

Continued on page 221

Letters from a Beekeeper's Wife

The Farm, March 1, 1917.

Dear Sis:

Rob is making out the order for new beekeeping supplies for this year, and while he does that I may as well write to you. He has pulled his front lock down over his eyes in the usual way when he is disturbed. We have both been groaning over the $300 that we have to put into supplies—we are buying 100 new hives among other things, for you know we expect to start another bee-yard this spring. That town lot that Rob's father bought years ago, when he thought the village would develop toward the west, has never been worth anything, but Rob thinks it will be a good location for bees and it is convenient enough to our other yards to make it feasible. Fortunately our $300 worth of supplies does not have to be paid for entirely in cash, for we have a considerable quantity of beeswax to turn in, to be made into foundation. Rob will feel differently about this investment by fall, and is really quite ready to spend the money now.

Would you believe that beeswax would make a more stable currency than gold? It really has changed less in value in the last fifty years than gold has, so I'm thinking I had better write to Washington and have our standard changed to beeswax. Think how nice beeswax coins would be to carry about; and wouldn't they be pretty with a skep stamped on one side and Her Majesty, The Queen, on the other, symbols of royalty and industry! A dollar weighing over three pounds might be a little awkward tho! Too bad the modest bees could never know their greatness. Surely no king whose head appears on coins can trace his ancestry as far back as the honeybee. You know fossil bees have been found, which indicate that they were living in colonies when the cave man was using stones to sling at his wife. I wonder if Grandfather Cave Man was stung when he stole the honey from the wild bees of the forest to carry home to his offspring. Of course he would have to promise to bring the children some sweets on his return from a hunting trip, and of course the bees would have to furnish them! Doesn't it make you humble to realize that these tiny insects in that early age had learned how to live in communities and to divide their labor, problems still unsolved satisfactorily for us?

FROM THE FIELD OF EXPERIENCE

They were ahead of us too in the matter of building their homes. I don't believe you will find such economy of material and space, combined with strength, anywhere but in honeycomb. The hexagonal cells, back to back and side by side, row after row, are marvelously fine and beautiful, and practical as well, for the material is waterproof and tough, yet plastic enough to mold. Personally, tho, I am just as well satisfied to be a member of the blundering human race that is still experimenting on building materials and so many other things. It might be a trifle monotonous to have double rows of apartments, all the same size and color, backed up together on uniform streets. It is plain to be seen that our friends the bees do not go in for artistic variety—still they are spared the fantastic and grotesque buildings that some of our neighbors force upon us occasionally. Remember the tower on old Mr. Tomlinson's house that Father used to call the wen?

Rob says it's time the children were in bed. They have been popping corn and pouring honey syrup over it. It's very sticky, but delectable, and I shall stop writing to have some. Wish you were here to help crunch.

Your loving sister, Mary.

* * *

Progress of Beekeeping in Virginia

I decided to give the quadruple winter case a thoro test this winter, so made eight cases of the Holtermann type and packed 32 colonies in them with about five inches of dry wheat chaff on all sides and on top.

I am glad I have the most of my bees packed in these cases, as the colonies were not as strong last fall as they should have been, and we are having some very cold weather here this winter. The bees have not been flying out on the warm days as much as they used to at this time of the year. Probably being packed so warm has something to do with it.

Beekeeping has not progressed in Virginia as it should have done. Most of the colonies are left out without any protection at all, and lots of them die in the winter from starvation and exposure to the cold. We have some cold weather here, and it is my opinion it would pay the beekeepers to experiment on winter protection.

We have lots of honey and pollen bearing trees and plants. Our earliest pollen comes from the alder, which blooms some time in February. It grows in great abundance along the river and branch banks, and is a great help in building up colonies. Next comes maple, which grows in great abundance in the forest, and is a great help to the bees, as it yields a good amount of honey as well as pollen, and just at a time when it is most needed in spring brood-rearing. Apple and peach are also good sources of early pollen and nectar. These fruits are raised extensively in some sections of the state.

Our main honey-flow begins the first of May, and consists of locust, poplar, gum, persimmon, and wild berries, of which blackberry is the most important. The poplar is our heaviest yielder in the first flow, and is more plentiful than any of the others. The honey is dark, but well flavored and of heavy body.

After the first flow is over we have about two weeks intermission, and then by the middle of June the next flow begins, which is from sourwood, sumac, etc. Sourwood is plentiful, and is a good yielder of a water-white honey of good flavor and body.

We have good markets in Virginia for all the honey we produce, and at a good price. In fact, most of our markets have to draw on other states for their supply.

I have had single colonies produce as much as 296 pounds of honey in one season, and have averaged as high as 183 pounds per colony in a season. My lowest average for four years was last season, and that was 38 pounds—not such a bad yield after all.

Stockton, Va. Francis W. Gravely.

* * *

Testing the Breeders

No matter where the prospective breeding queens are procured, it is very important for the keeping up of our particular strain that they be put thru exhaustive tests to eliminate any but those possessing such qualities as are desirable in our queen-mothers. Since it is possible to requeen the whole yard from one queen, without much extra effort, it is but reasonable to insist that her qualifications should be above the abilities of any but the extra best. Therefore one should not breed from a queen in

Continued on page 224

FROM THE FIELD OF EXPERIENCE

Wide Spacing for Swarm Control

Speaking of the control of swarming from the honey-producer's standpoint, I feel that I ought to acknowledge my ignorance. Tho I have studied the problem for many years, tho I have worked hard to keep swarming in check, and have made the work pay, I do not know the cause of swarming.

I have read practically all that has been written on the subject in the English language since 1890. Many theories have been advanced, accompanied by more or less convincing proof, but in practice all have proven fallacious. It may make the matter a little clearer to say that swarming is caused by an instinct which is modified by environment, as are all instincts. The instinct itself must be attacked if we are ever to have non-swarming bees; and that can be done only by careful and long-continued breeding. There is no doubt in my mind that successful work is being done in this line. I have some hope that my grandchildren may be able to buy non-swarming stock by the end of the present century.

Taking the other half of the difficulty, that of environment, there is hope, and indeed certainty, of success; but the labor involved is so great that it requires some figuring to be sure that it pays. In my own apiaries I depend on the fact that bees seldom or never swarm without a queen, keeping all colonies queenless during all or a part of the honey-flow. This work is so exacting that I have never been able to get it done by hired help. I do all the work myself, and even then I have some swarms. I may remark in passing that I have known two cases where a colony swarmed and left apparently without a queen of any kind. I think I described the cases in GLEANINGS a year or two ago.

Certain factors in environment are easily disposed of. It is easy to give ventilation and shade. Wider spacing of frames, at least so far as to give it a trial, may be had with little trouble. By leaving out the division-board in eight-frame hives, spacing all frames equally to take up the extra room, we can have 1½-inch spacing. In ten-frame hives, one frame may be left out, leaving the division-board in the hive. Since the point of wide spacing has been brought up by Mr. Dadant, and given a prominent place by the editor of GLEANINGS, I expect to try the wide spacing on twenty per cent of my colonies thru the next honey-flow. If records are carefully kept, such an experiment may be valuable.

There will be some difficulty in removing the first frame when no division-boards are used, and some trouble in getting back to the narrow spacing when the cells have been lengthened and filled with honey; but the experiment must be made if we are to have any definite knowledge on the subject. If 1½-inch spacing of brood-frames will give us ten per cent less swarms I will cheerfully bear the expense of making the change.

I still feel inclined to doubt the evidence. So many factors are involved that it is difficult to judge; and Mr. Dadant does not claim any positive knowledge. I should like to see an article on the subject, by Allen Latham.

Newman, Ill. C. F. BENDER.

Why Dequeen the Cell-builders?

On page 939, October 1, Mr. Kennith Hawkins takes Mr. Pritchard to task for advising Mr. Kuenzli to use only capped brood in his cell-building colonies, stating that he cannot afford to have so many colonies backward from dequeening and requeening later. Now I shall have to go Mr. Hawkins one better and ask him why dequeen at all. I find it unnecessary. Furthermore, I find it more advantageous to have a good vigorous queen in the hive to keep up the supply of young bees so necessary for the best results.

Last season I started with one colony fairly strong, and the same colony continued to build fine cells the whole season. I prepare my colony for cell-building by raising two combs of hatching bees over an excluder. These young bees hatching out and finding cells left vacant seem to consider themselves queenless and will take a limited number of cells. As fast as they gain in strength they will accept more; but I make my queen-rearing system a continuous performance, giving only a few cells each day, about seven or eight generally the first two days; then after waiting a couple of days I repeat the operation. From time to time I take a frame or two of hatching brood from the lower story of the hive and put it above; but this is more for the purpose of giving the queen more room to lay, thereby adding more bees to the strength of the colony than for any other purpose, as the bees as they gain in strength will naturally crowd up into the super. This cell-building colony I used last season contained a very fine drone-producing queen, so I assembled

FROM THE FIELD OF EXPERIENCE

a large amount of drone comb in the lower story; but in spite of this handicap they made me sixteen frames of honey. The hatching brood placed above the excluder as fast as the cells are vacated is replaced with honey, and sealed over. This I put away for winter stores. During a certain part of the season the bees are very troublesome about building comb on the queen-cells unless they are given a certain amount of cell-building to do, so I make it a practice to fill up the additional space in the upper story with empty frames containing inch starters.

NO JELLY USED IN GRAFTING.

I use grafted cells; and, contrary to the usual idea, I find that I get more cells accepted without royal jelly than I do with it; and also, contrary to the text-books, I find they are not inferior cells either. The essence of success is in doing the work quickly, otherwise the larvæ becoming dry are not accepted. By my system of giving only a few cells at a time I overcome this tendency and do away with the necessity of tearing into cells and robbing them of their jelly.

COLORED CELL CUPS TO TELL THE AGE.

It may be interesting to know how I can tell how soon to cage my cells when due to hatch, as I do not want them taken away from the bees at all. I graft my cells attached to wooden cell cups similar to the Root system, but I color the wooden cups a different color for each day in the week. The system of colors I use is as follows: red, white, and blue (an easily remembered combination) represent the first three days in the week. Wednesday cups are black, which, being no color at all, separates the first three days from yellow, green, and brown, representing the last three days of the week. It does not follow that one needs to graft cells on Sunday if he is opposed to Sunday desecration; but a color scheme to be a success must take cognizance of each day of the week the same as a calendar numbers each day consecutively. Having my cells all colored I know at a glance that a blue cell was grafted on Tuesday, and it can be expected to hatch about Monday of the following week after it is sealed. An experienced eye can always tell from the appearance of the cell if it is just sealed or if it is nearly ready to hatch.

By using this system of grafting and coloring cells, I am also enabled to get along with a few cell-cages. My cell-nursery-cage system is also something different, as I do not like the idea of taking cells away from the bees for an instant, so I made a couple of hangers to fit an ordinary Hoffman frame and tacked on each side of them a strip of Tinker zinc about three inches wide, and at regular intervals I placed a partition to which I also tacked the zinc. Over the top of this frame I nailed a thin piece of maple in which I bored ¾-inch holes. This made eight compartments in each frame in which I place a cell each, a day or two before ready to hatch, and the bees are able to go thru the zinc and cluster on the cells, thereby keeping them warm and also feeding the young queen when she cuts her way out. I do not know what would be the effect of leaving these queens too long in these cages; but the bees might tear cells down if left too long, so I make it a practice to go the first thing in the morning and remove all hatched queens and introduce them to nuclei. I have frequently left young virgins in this nursery cage for several hours without any bad effects, but they are much easier to introduce if young.

Salem, Oregon. Frank M. Alley.

* * *

One of the Old Veterans

A. G. Lyman, of Morganton, N. C., one of the oldest beekeepers in the state, has taken Gleanings since it first started. Until two or three years ago he had every copy on file that was ever issued; but, unfortunately, they were destroyed by fire.

Mr. Lyman has about fifty colonies, and cares for them himself, following strictly modern methods. Even at his ripe old age he makes his own hives, which are as perfectly constructed as any hive on the market. After a long experience in several states he advocates a 12-frame hive, or a 10-frame at the very least.

At the recent field meeting here conducted by Mr. Rea, Mr. Lyman was one of the youngest and most enthusiastic men in attendance. L. E. Webb.

Morganton, N. C.

* * *

With a Three-frame Nucleus

On June 1 I started in beekeeping with a three-frame nucleus in a 10-frame hive. During the fore part of October I took off a super with 26 beautifully built sections and found the brood-combs entirely full of honey. J. W. McMillan.

New York City.

FROM THE FIELD OF EXPERIENCE

Effective National Advertising

Mr. H. Bartlett Miller, in the January number, page 36, has an article on the above subject, in which he says: "I have come to the conclusion that we are not down to bedrock in the essentials of advertising as taught by modern schools devoted to this subject." Advertising is a gamble, not an art nor a science. It is largely guesswork, for no man alive may know what results he will get from an advertisement until it is tried. Mr. Bartlett then attempts to elucidate, but gives the reader nothing new until he jumps on to my pet, the little "EAT HONEY" sticker, nearly breaking my heart by saying, "It is good in its way in lieu of nothing at all." Fie! However, I do not need to defend the little thing, as I am informed that millions of them are being sold. A further remark of his, "That honey aids digestion does not appeal * * * *, " leads me to say that I am not to blame for "aids digestion—Nature's own sweet," "Angel's food," and the other words added to *eat honey,* so I dodge one brick.

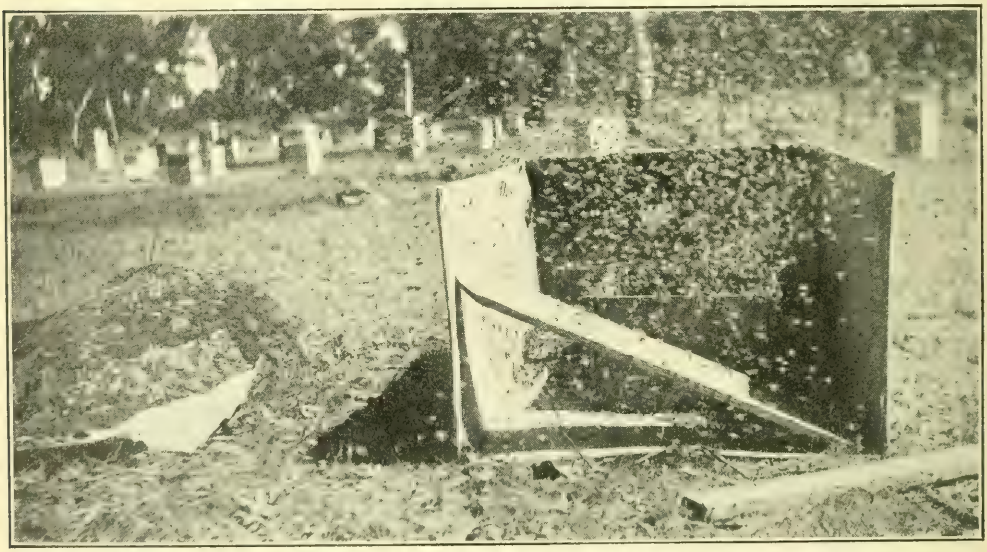
Mr. Miller is not satisfied with getting up an advertisement which, I think, violates the very first essential of good work—namely, truthfulness. After declaring that "* * * * * * we add another fact that the reader never knew before, and cannot contradict. Being a fact, the whole world must come to recognize it *if we tell them sufficiently often.*" That is naive, is it not? Why, bless you, Mr. Miller, that is about all there is to advertising.

However, Mr. Miller's advertisement is open to serious criticism, aside from its untruthfulness. In the first place, it is much too long for a catch-eye poster. According to my ideas of advertising, it would be far better if he stop at the first period, when it would read: "You cannot live (as) long as you should unless you eat more honey." Why attack sugar, when everybody eats it, always has eaten it, and always will eat it? Why not hold up something we know is more or less injurious—the various corn-syrup abominations? But, after all, why abuse any of them? You only weaken your own advertisement.

The first part of his advertisement will not stand examination, as nobody will pay a bit of attention to the statement, for they instinctively feel that it is lacking. Were it true, it would have been known ages ago, and honey would not have been begging a place on our tables. In the next place, the reason given: "Sugar wears the system out. Honey builds it up," is totally untrue, and the statement will bring down ridicule on our advertising.

I have always entertained serious doubts as to the utility of calling attention to honey as a remedial agent, and have a lingering suspicion that it is not well to

Continued on page 225.



Bees in Australia in a frenzy of delight over artificial pollen.—From W. J. Barnes, East Melbourne, Australia.

STRAY STRAWS

Dr. C. C. Miller

Buying colonies in box hives at $1.50 each is better than to increase when sugar is high, p. 55. May it not be better even when sugar is low, if you take into account that you gain a year in the harvest with the box hives?

Prof. Baldwin advises, when introducing a queen by sousing in honey, to have the entrance narrowed for a day so as to avoid robbing, p. 1161, Dec. 1. Possibly it might be still better to operate in the evening, so everything would be cleaned up before morning.

Supersedure of queens is not infrequently spoken of as a thing rather exceptional. Think it over carefully, and see if you don't settle down to the belief that, in the natural course of affairs, barring accident and interference of the beekeeper, *every laying queen ends her career by being superseded by the bees.*

J. H. J. Hamelberg, p. 1167, you go half an inch beyond me when you say "the distance between the floor and the bottom-bars of the brood-frame is 2½ inches." But you don't say how you prevent the bees from building down in such a deep space. Or don't the bees build down in the Dutch language?

Walter J. Bailey's ventilator, p. 1166, looks like a good thing. But the super sits square on the hive. As it is an extracting-super, why not shove it forward so as to leave a ventilating-space of ¼ or ½ inch at the back end? Then the next super could be shoved backward leaving a space in front, and so on, staggering the pile.

Have you made up your mind to improve your stock by breeding from the best? If you've begun only now to think about it, you will hardly know which is your best colony this year, and must guess the best you can. But it's none too early now to lay your plans for the breeding of 1918. Keep a written record of each colony. If brood is given to a colony to help it to build up in the spring, or if brood is taken from it to help others, put it down. Especially give each colony credit for its honey each time you take any from it. If you do that faithfully this year you will have an intelligent idea as to which colony or colonies to breed from in 1918. There's big money in it.

"Gleanings has decided it will accept no advertisement from any pound-package man unless he will furnish satisfactory references, guaranteeing pure stock and safe arrival," p. 11. I'd prefer impure stock by the pound, if so represented, and at a little lower price. [Impure stock will not resist European foul brood as will pure stock; and it will cost no more to furnish good stock than poor stock. Why not furnish the best? —Ed.]

When a laying queen ends her career, what kind of death does she die? I know that normally she is superseded by the bees; but I don't know whether she is killed by the young queen or by the workers (it seems rather horrible to think of one of her own children killing her, whether queen or worker), or whether she dies a natural death. Some one please tell us.

J. E. Crane asks, p. 48, why I don't use free-hanging frames, just as Langstroth made them. I did use them many years. They take less time for taking out frames, but that gain is greatly overbalanced by the amount of time it takes to put the frames in; and with the utmost care one can't space them as regularly as the self-spacers. Then, too, there is trouble with the frames twisting, allowing bottom-bars to touch.

Some one is reported, p. 56, as getting even with the Dadants — freedom from swarming—by having two stories for the queen till a week before harvest, then putting eggs and unsealed brood in the lower story, hatching brood in the upper story, an excluder between, p. 56. I'm pretty sure my bees would swarm with that treatment. But they might not—I think generally would not—with hatching brood below and unsealed brood above.

A. I. Root, you tell us, p. 65, that you thought of taking the best potato, evidently having picked it out, then thought better of it, took another, and passed the dish over to Mrs. Root. So long as you had your eye on the best, it would have been better to pass that directly to Mrs. Root, not giving her the chance to follow her usual custom of taking the poorest. At our house there is no trouble as to selection—the potatoes are all best. Mrs. Miller raises them.

"For early spring, while the bees are building up, I crowd the frames up to 1⅛ to 1⅜, so that the bees can cover more space," says F. H. Cyrenius, p. 63. The closer the spacing the more combs the bees can cover. But somewhere there comes a point where the spacing is so close that there is not room for enough bees to keep the brood warm. Is it certain that that point is not reached somewhere between 1⅛ and 1⅜?

A MISSOURI beekeeper asks why bees should go 1¾ miles to work upon a given plant when there is more than they can do on the same plant within half a mile. I don't know why all the bees of an apiary do not pounce upon one spot where nectar is most plentiful; but it's a fine thing they don't, and I suppose Dame Nature gives them the instinct for spreading themselves around, and the same instinct makes them sometimes go further afield than is absolutely necessary.

J. P. BRUMFIELD wonders what M. H. Hunt does with the combs and what honey is in them when he uses the Demaree plan for comb honey, putting the brood over a ventilated bee-escape board on top of the sections, GLEANINGS, Sept. 1, 1916, p. 777. Mr. Brumfield says he would rather keep a white elephant over summer than a set of brood-combs without bees, on account of moth. I suppose they might be piled several stories high over weak colonies. But I must confess that when I tried Mr. Hunt's plan the bees carried down bits of black comb and darkened the cappings of the sections.

HEARTILY I commend the able way in which the advantages of " Roadside Marketing " have been shown up, p. 13, all but one thing. I regret exceedingly to see anything said encouraging Sunday as day for best sales. If I believed in no God and no hereafter, I would still insist, on purely economic grounds, on the careful preservation of one day in seven as a day of rest. Big business is all tending that way nowadays, and for beekeepers to make an exception is a step backward. But believing heartily in a God and a hereafter, I count it still more important than for economic reasons that we avoid Sunday sales because that God said, " Remember the sabbath day to keep it holy."

J. P. BLUNK, referring to the last Straw in GLEANINGS, Dec. 15, thinks 50 to 55 degrees hardly warm enough for cellar, 60 being perhaps better. He also thinks my bees might be better off without sealed covers. May be, may be, Uncle Joe, but I'm not so sure. You say your bees winter better since you gave up sealed covers; but I don't think the air in my cellar is so stagnant as in yours, for I think your cellar without a furnace is a good deal colder than mine. With the air in the cellar the same temperature as outdoors there is no change of air; and the warmer the cellar compared with outdoors the more rapid the change. With the air constantly moving in my cellar, and with an opening of 2x12 inches to each hive, there ought to be little suffering from confined air.

J. E. CRANE has invented a device that Editor Dadant reports approvingly in *American Bee Journal,* January, 1917, p. 52, and Mr. Crane describes it thus in the January *Domestic Beekeeper,* p. 55: " A honey-board to cover the entire surface of the brood-chamber, with no entrance thru it but two slots on each side for the bees to carry the honey up into the super. This board covers all of the center of the brood-chamber, where bits of dirty wax are liable to be carried up and mixed with the cappings of the sections and injure their appearance. It should not be put on until work in sections has been well started, after which it does not seem to keep bees from storing in the sections." [The readers of GLEANINGS who have the back numbers can find an illustration of this honey-board, as described by Mr. Crane at length in the Dec. 15th issue for 1908, page 1508. Mr. Crane advises putting the boards on just when the bees are ready to begin capping the honey.—ED.]

SOME SAY their bees store so much pollen that they have to throw away some of the pollen-clogged combs. That may be, but I'd like to be more sure of it. You know it is said that a queenless colony stores little or no pollen. Yet a queenless colony is the very one to have pollen-clogged combs. I suppose the fact is that a queenless colony keeps right on storing pollen; and then when pollen is no longer needed because no brood to be fed, an accumulation occurs. Then when the bees find there is an overstock they stop bringing it in. If queenless bees stop bringing pollen because not needed, will not other bees do the same? I wonder if throwing away combs of pollen isn't as bad as throwing away combs of honey. [Combs of pollen in the spring of the year may be worth several times the same number of combs solid with honey. While bees can start brood-rearing on rye meal and some other substitutes, there is nothing that comes anywhere near the natural pollen. The want of it at the right time may seriously check brood-rearing and cut down the working force and leave the colony in poor condition to catch a crop that may be available. Or, to put it another way, a stock of combs containing pollen may make all the difference between profit and loss in the yard.—ED.]

NOTES FROM CANADA

J. L. Byer

JANUARY, 1916, is remembered by many beekeepers in Ontario as being unusually mild all thru—so mild indeed that bees in many cases started brood-rearing heavily and used up a great amount of stores. January, 1917, to date is altogether different, as it has been quite cold nearly all the time, with a number of days below zero—twice it has been 20 below in our vicinity. All things considered, a steady, moderately cold winter is better for the bees than one with many sudden changes—at least that is my opinion and experience.*

* * *

The snowfall, while not heavy so far, has been at all times, since cold weather set in, sufficient to give a nice covering to the clover. While the snow is in some respects not altogether a thing of pleasure, even if it is a thing of beauty, yet a winter with little or no snow here in Ontario is abnormal, and I think we are all agreed that heavy snows are a benefit rather than otherwise. With no snow on the ground the frost goes deep, and then in the spring the danger of "heaving," as applied to clover, is much greater than it would be with little frost in the ground. In short, snow is a protector; and among other good things it is a wonderful help to bees wintering outdoors to have a good thick blanket of "the beautiful" over the hive when the thermometer gets to zero or lower, and the winds are howling.

* * *

This year there has been a tendency on the part of some beekeepers as well as some educators of beekeepers to encourage the use of 60-pound tins as a package for supplying customers who are learning to use a lot of honey. Personally I think this is a great mistake; and while I formerly sold more or less to retail customers in that style of package, I now would not sell it to them in a 60-pound tin unless they really asked me to do so. Five or six years ago we did quite a heavy western trade in 60-pound tins, but now we have cut it out altogether. Why? Simply because the great majority of people having granulated honey in as large a package as the 60-pound can will spoil the honey more or less when they liquefy it. Then, again, a smaller package is easier to handle in every way, and the bulk of the honey may be kept safely sealed away from dust, moisture, etc., which is not so easy with one large tin. Instead of a 60-pound tin, we now sell to scores of families each year 60 pounds or multiples of 60, supplying it instead in 10-pound pails, six pails in a crate. For the local trade the crates are always returned gladly; and in shipping west, there is little difference between cost of the crated 60 or the 6 pails in a crate, as in the latter case all pails are sold gross weight, the customer knowing fully what he is getting. The pails are lithographed, and have directions for liquefying, where to keep the honey, etc., plainly printed on them. They serve as educators in more than one way. I certainly consider the 60-pound tin a back number as a retail package, even if families are being supplied that use large quantities.

* * *

Talk about "old-fashioned winters"—if the present one does not come under that heading, then we never expect to see one. Very steady cold almost every day since early in December, and bees have not had a chance to shift in the hives, let alone have a flight. How are they wintering to date, Feb. 7? I have hardly looked into a colony since weather turned cold, so I can not even make a guess. With smaller clusters than usual, and such a cold steady winter one might imagine the very worst. In the fall it always gives us a pleasant feeling to find brood-nests heavy with honey; but about Feb. 1, with a winter like this one, we begin to wish there were more sugar syrup in the hives, for there is no question that the syrup gives best results when bees are put to real severe tests. If natural stores are perfect, then nothing can excel such for wintering; but, unfortunately, this is not always the case; and during exceptionally long terms of confinement with steady severe weather, dysentery is sure to show up in the apiaries more or less.

* * *

On page 1064, Nov. 15, Mr. Chadwick takes an entirely erroneous view as to what I had in mind when recently speaking of diagnosing conditions of a hive by external examination. He says, "Where there is a reason to expect disease, careful inspection is necessary and should be encouraged to the greatest extent." We were not speaking about disease, but about running a lot of apiaries with little help, right in the rush of the honey season. Here in Ontario, at least, we want all inspection for disease done long before that time. While I am ready to admit that some pretty rough work goes on in some of our yards at times, yet we certainly want to examine each brood-nest thoroly twice each year to be sure if foul brood is present. The first and main examination is during fruit-bloom, when the clipping is done; and then after main flow is over we try to examine each brood-nest again during buckwheat bloom.

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* Most of the items on this page were prepared for the February number, but reached us too late for insertion in the last issue.—Ed.

* * *

LARGE SHIPMENTS OF BEES IN ONTARIO.

Buying bees from the South in combless packages bids fair to reach large proportions in Ontario this year. Bees thus bought in 1914 and 1915 were in many cases very unsatisfactory, owing to poor seasons, and also to the fact that many packages arrived in poor condition. On the contrary, bees bought in this way in 1916, wherever received in good condition (and this was the rule rather than the exception), gave universally good results—hence the boom. While no one knows just yet how the combless-package business will turn out, one thing is certain—seasons like our last one are pretty sure to be few and far between. The clover flow came very late and gave the bees a chance to build up before the flow, and then, again, the best part of the clover flow was near the end of the blooming period. I have had seasons in the past when as much as 100 pounds per colony was harvested; and I am sure the pound packages in said years would not have stored a pound of surplus, as flow was very early, and over with by the time it only nicely started this past year. With the volume of business that is sure to be done this year, no matter how the venture turns out, the editorial admonitions in the January issue are timely and to the point, if much dissatisfaction and unpleasantness are to be avoided. For one thing is sure—shipping pound packages is something that all advertisers along that line have not yet accomplished.

* * *

LARGE VS. SMALL.

A nice predicament I have got into surely by making comparisons between that extremely small entrance mentioned on page 909, Oct. 1, and the extremely large entrances endorsed by some people, and classing them both under the head of "ridiculous." Like a Scotchman under somewhat like circumstances, "I will no apologeese, but I will compromeese" by saying that for the moment I forgot that Dr. Miller used such a monster entrance as mentioned on page 1013, Nov. 1; and if I had not been so thoughtless I would not have made the comparison. But if any other beekeeper than the doctor advocated such a large entrance I would still be tempted to designate it as "ridiculous."

But see here, doctor, I am not going to humor you by saying which I should prefer in the way of entrances if forced to use either that very small one or the one with the *front of the hive removed,* for, "honest Injun," I think both of them ridic—beg pardon, I meant to say, both of them are extremes, and I would rather take a course somewhere midway between the two. Yes, I have my own ideas as to why such large entrances are no help to a colony, even if they are not harmful; but in the face of the trimming I could look for, if these claims were advocated, probably I had better keep quiet, for "he who fights and runs away may live to fight another day."

* * *

THE DOUBLE WINTER CASE.

The editorial on page 1011, on wintering in Canada, may be right in assuming that quadruple cases are growing in favor among the beekeepers for outdoor wintering. Possibly that is the case, for I personally know that a number of good friends, among them some of the best beekeepers here in Ontario, use these cases and recommend them to others. But there are others, and the writer is among them, who much prefer the single case or a case large enough to take two colonies. Personally I like hives facing south. That is one reason for my preference for the smaller cases.

But the main reason for my objection to the four-colony case is their bulkiness. One man can hardly handle them alone under any circumstances unless they are made on the clamp principle, and then there is always a mussy job gathering up the packing. In our seven different apiaries we have hundreds of one and two colony cases, and but five quadruple cases in the whole outfit. Five will be the maximum as long as I have anything to do with the business; but I am not sure whether that number will be the minimum. This is a free country, and many men of many minds; and far be it for me to try to persuade any one on this question, as bees will winter well in *any* of the cases provided the bees are well prepared in other ways.

IN CALIFORNIA

P. C. Chadwick

OUR mean temperature for December was the lowest for 29 years.

* * *

The records up to Feb. 1 show that the rainfall is a little below the average for the season.

* * *

What we feed is of little more importance than *when* we feed.

* * *

If no moths are allowed to hatch in neglected combs they will get pretty scarce in a short time.

* * *

It is a great deal better to have a lot of supplies ready that you do not need than to need a lot that you do not have ready.

* * *

A man who can be trusted to do the right thing when no one is looking at him is the kind of man to have at an out-apiary.

* * *

If a low grade of honey can be used by large concerns for making desirable pastry, why can not the housewife learn to do the same?

* * *

There was less pollen brought into my hives during December and January than at any time for thirteen years during the same months.

* * *

A little lemon juice is excellent to remove propolis stains from the hands after they have been cleaned of the propolis (ladies, take notice).

* * *

San Diego County's farm adviser is collecting samples of honey to aid in standardizing the product thruout the county.—*California Cultivator.*

* * *

Book theory of beekeeping is valuable; but when we add to this the real, dearly paid-for experience that most of us get, we learn the things that we remember.

* * *

The last sentence of my third paragraph on page 52, January issue, should have read: "I believe more harm is done by injudicious spreading than good is done by knowledge of the art."

* * *

January ended the fourth consecutive month with the mean temperature below the average. It was even colder than December. There were 24 days when the minimum reached below 40 degrees; ten days when the minimum was down to the freezing - point and below, and twenty days when the maximum did not reach sixty degrees.

* * *

Wintering five-frame nuclei is expensive. I have some nuclei to which I have given more combs of honey during the winter than my ten-frame hives had at the beginning of the winter, yet the ten-frame hives have more honey at present than the five-frame.

* * *

If you find a colony destitute in cold weather, do not try to feed the bees thin honey or syrup, but give them pure thick honey or very heavy syrup. They have to put in a lot of work on thin feed, reducing it, and that makes undue excitement, which is not desirable in cold weather. Thin syrup is all right for stimulating—the thinner the better so long as they will take it up.

* * *

The county bee-inspector of Los Angeles County has been placed under civil service, and all deputy inspectors must pass an examination. This seems like an excellent idea, at least so far as getting competent inspectors is concerned, provided the examination is up to a high enough standard. It won't put "pep" into an inspector, however, and that is really an important qualification for this office.

* * *

During the winter of 1915 wood rats or trade rats, as they are called, got very bad at my apiary; and in order to save the expense of their waste I purchased a can of poisoned wheat at a local drugstore and fed them freely on it. In the spring I was overhauling my equipment, and, to my surprise, I found a very cosy nest in a stack of supers, with plenty of my dangerous wheat in easy reach of the nest. The rat had either had his stomach lined or the wheat was not sufficiently poisoned.

* * *

During March the apiary should be carefully inspected to locate any disease that may appear. If a few colonies are found that show disease, make them safe by leaving only a very small entrance until they can be cared for. If American foul brood appears, melt up the combs at once, and be sure that the bees do not get into other hives before you kill them. If it is European foul brood, and there are only a few colonies, it is cheaper to melt them up also. If a number of colonies have it, then treatment may be the most desirable. If you do not know disease when you see it, get your inspector to help you. He will willingly do it, for that is his business.

* * *

There is some agitation favoring barrels for honey in California. Go slow, boys. The trade is looking for California honey to be delivered in the usual cans and cases, and there would be some very suspicious customers if the same package were tried that brings cheap honey from other parts of the world to our markets. Besides, the cans and cases are far more desirable to handle. Loading a barrel of honey would make "quite a little chore" for two men; then you might want to bring in a few hundred pounds on your "tin lizzie" as you come in from the apiary each night, and you would find it rather uphill business loading a barrel of it yourself.

* * *

There seems to be an impression prevailing that a queen raised under swarming conditions, which may be said to be natural conditions, is superior to one raised thru other inducement. Personally I cannot see why that should be the case. If larvæ are transferred at the proper age, and a colony given cells after all of their brood has been removed, the nurse bees will literally flood them with royal jelly, give them every attention desired, and draw the cells out long enough for the most particular persons. It must be true that the majority of queens sold on the market are raised outside of the swarming season, yet the beekeeping public seems to be very well satisfied with them, and they seem to be giving good satisfaction.

* * *

Did you ever spend an entire hour watching the bees work on the flowers? Try it once and you will find out how long an hour really is. Don't wander around looking at a bee here and there, but pick out a bee and stay with it until it is ready to go home, then take up another one. Last summer I watched thirteen hours, an hour or more at a time, attempting to prove that a bee would gather pollen from more than one kind of flower on one trip. But I did not prove it. Once I was sure that I was going to see one mix its pollen. Down, down it came until it almost touched another kind of flower, but not quite, for it refused to alight. I went into the subject fully convinced that I would find that a bee would mix the pollen from two different kinds of flowers on a single trip. I chose, for my observation, places where numerous wild flowers of various kinds and colors were growing with each other. At one time I had four different bees under my immediate view, all of which were gathering a different color of pollen; but not one slip did they make that I was able to observe, each remaining true to its color until the load was completed.

* * *

Many beekeepers are waking up to the fact that their bees have consumed more than the average amount of honey during the past four months, while many colonies were left with only the average amount to begin with. The result is what might be expected—reports of heavy losses from various localities, which losses are due entirely to the lack of sufficient stores to feed them properly. It should be an object-lesson to those who have been the sufferers; but the chances are they will soon forget and be caught in the same trap before many years pass by. Better think the following over and write it on the honey-house door: "Nothing is lost by leaving plenty of honey in the fall; for if your bees do not need it, it will be there the following spring, and you will get it any way. If they do need it, they need it bad."

* * *

A bulletin has just been issued by the College of Agriculture at Berkeley, entitled "The Common Honeybee as an Agent in Prune Pollination" (Bulletin No. 274). It treats of experiments made on this line during the past season. I advise beekeepers to write for a copy of this report.

A pair each of French prunes and Imperial prunes were enclosed under mosquito-bar. One of each variety was furnished a colony of bees within the enclosure, while from the other one all insects were excluded. The results were as follows: Amount of matured fruit on the French prune-tree under tent with bees, Aug. 1, 18.05 per cent. French prune-tree under tent from which bees were excluded 1.04 per cent. French-prune average orchard set 3.59 per cent.

Imperial prune-tree under tent with bees, 1.69 per cent. Imperial prune-tree from which bees were excluded set nothing. Average orchard set of Imperial prune, 7.20 per cent. The following conclusions are offered: 1. That the French prune may be aided in setting a satisfactory crop by the presence of bees in the orchard during the blossoming period. 2. Without the aid of bees or other insects the set of fruit on the French prune is often light. 3. The Imperial prune does not seem to be able to set fruit unless pollinated by insects with pollen from other trees.

THE DIXIE BEE

Grace Allen

NORTH Carolina has organized a State Beekeepers' Association, with a nucleus membership of thirty-three. Prof. Franklin Sherman, Jr., of Raleigh, is President; Mr. W. C. Flemming, of Greensboro, is Vice-president, and Mr. S. S. Stabler, of Salisbury, Secretary-Treasurer. The start has been made with enthusiasm, and we all wish the association great success.

* * *

This has proven a hard winter on our Dixie bees, to date. Weather conditions have been unusually severe, as tho trying to show our federal extension workers how bad they could be! We have had all sorts of sudden changes, with wide daily ranges of temperature. Two or three times we have struck practically zero weather.

From North Carolina comes a similar report, with the prediction of 30 per cent loss, due to the hard winter and low stores. An examination on January 30, when the bees had a good flight, showed less brood in packed hives than in unpacked.

* * *

The Tennessee State Beekeepers' Association met on February 2, with the mercury at two degrees above zero—good clustering weather, said Prof. Bentley, state entomologist. The weather undoubtedly kept some of our members away, but at that there was a fair attendance. Pres. Ben. G. Davis in his opening address made a brief plea for continued improvement in Tennessee beekeeping, deploring the necessity of large shipments of honey into this state, when we could and should raise enough for ourselves and our neighbors.

In his report of the year's work, Dr. J. S. Ward, state inspector, gave us some interesting figures covering both 1916 and 1915. This is a long state from east to west, and on an appropriation of $1000 it is obviously impossible to visit the entire state in one year. Dr. Ward's figures follow.

	1915	1916
Apiaries visited	43	73
Colonies inspected	1374	2060
Queenyards inspected	6	4
Cases of American foul brood	58	97
Cases of European foul brood	150	113
Cases of sac brood	46	32
Cases of paralysis	20	13
Demonstrations given	32	40
Lectures with lantern	12	6

There was an able paper by J. M. Buchanan, Franklin, on "Spring Management," explaining the use of two stories for winter and early spring; another by J. Ivan Banks, of Dowelltown, on "The Value of Young Queens," in which Mr. Banks advocated requeening every year, and still another by J. E. Ring on "Marketing Honey."

As was to be expected, the particular interest of the meeting centered in the talk by Mr. C. E. Bartholomew, the federal extension expert, on "Wintering Bees." Early in his address Mr. Bartholomew referred to our winter loss as 50 per cent. If this figure is accurate, the average loss must be enormous up in the mountain districts or "back in the sticks," for among the progressive beekeepers in this section it is much less—much less. He quoted in some detail the interesting weather reports of daily temperature range and winter averages and summaries, concluding with the assertion that Tennessee bees need packing worse than the bees of Canada! And he backed it up with the reports of those scientifically conducted experiments at Washington.

Mr. Bartholomew also made a vigorous plea for stronger organization. Moreover he reported three good county organizations already formed—one in Smith County, one in Overton, one in Lincoln, with formal printed constitutions and schedules for monthly meetings. One interesting feature is the marketing committee, to look after not only the marketing of the honey crop to best advantage, but also the purchasing of supplies for the association. Each of these county associations is a unit in the county agricultural society as well as the state beekeepers' association. Other counties were urged to follow the progressive example of Smith, Overton, and Lincoln.

The question-box brought out some animated discussion. The question "What is the best way to make increase in this locality?" brought some smiles thru the instant answer, "Buy your bees from your neighbors!" Another question of interest was "How many at this meeting use some protection for their hives in winter?" The president called for a show of hands. Not one! May be some one will ask the same question next year. May be the answer will be different.

The following were elected officers: Dr. J. S. Ward, President; Mr. J. M. Buchanan, Vice-president; Mr. C. E. Bartholomew, Secretary-Treasurer.

Mr. Kenneth Hawkins, federal specialist for the South at large, has been compelled by poor health to discontinue his work.

SIFTINGS

J. E. Crane

MR. Crowfoot, on page 37, January, tells us that his honey was all sold by Nov. 1. It is somewhat surprising the way extracted honey went this year. However, we have been able to get enough of late to supply us until the new crop comes in.

* * *

The editor, page 57, says one producer retailed his entire crop of 46,000 lbs. It would be interesting to know whether he was located in a rural community or near large towns or cities. [He lives in a rural community but drives around to the larger towns with his honey. He also attends large gatherings of people on special days. In this way he introduces his honey everywhere in his locality.—Ed.]

* * *

On page 52, January, M. H. Mendleson, we are told, allows no handling of comb honey after sundown, which we are given to understand will prevent the development of the larva of the wax-moth on the combs. Not so here in the East. If a super is taken off and sealed at once, but left where warm, worms are almost sure to appear if there is soiled comb or an open cell of pollen. When there are moths, bees evidently carry their eggs about the combs on their bodies, and drop them in all sorts of places inside the hive or on the section combs.

* * *

I have sometimes wondered if it would not pay to have standard glass honey-containers. At the present time we have to depend to some extent on containers manufactured for those who put up pickles or olives or other groceries. Most bottles are made to hold so many ounces of water; and as honey weighs one and a half times as much as water, it often gives us an undesirable weight. Again, if there were standard sizes that could be made in large quantities they could be made cheaper. Alas! how much trouble “many men of many minds” make!

* * *

The writer of the Texas department, page 53, seems to think that a heavy flow of honey here in the North would check swarming the same as in Texas. Not so hereabout. The past season we had an unusually heavy flow, and bees swarmed to match and kept it up until the heavy flow was over, but we were working for section honey.

“The wealth of the California wild flowers cannot be imagined by one who has not seen them in their fullest glory,” says Mr. Chadwick, page 51. Doubtless he is correct; yet I sometimes think we have more here in New England than we appreciate. I have been surprised in riding over the state during the last few years to notice the fields of flowers, one white, another yellow, and another pink or purple. How much more we might enjoy if only we had eyes to see!

* * *

The experience of Mr. Macey, page 1127, as to how far bees will fly, is of rather unusual interest. His experience, however, does not prove that even his bees were not in the habit of flying a mile or more. After the storm reported, the bees may have flown for half a mile or more, and, finding nothing, may have returned to the hive and given up the search. Again, the result of the storm may have kept the sweet clover from yielding honey. I have known a thunderstorm to stop the flow of honey so completely, altho the pastures remained white with clover bloom, that little or no honey was gathered afterward.

* * *

In a footnote, page 1113, Dec. 1, the editor says it is bad practice to sell one case of honey for $2.75, another at $2.50, and another at $2.25. Now I want to ask a question: Do the western beekeepers sell by the case without regard to weight? With our present law every section must be marked and we are advised to place each weight in a case by itself. So we have cases weighing from 16½ to 21 lbs. if we put up 11 oz. for No. 1. If the price is, say, 15 cents per pound net, the lighter case should sell for $2.37½, while the heavy case should sell for $3.15—a plain difference of 80 cents per case. Here in the East, dealers seem to be a little particular, and want to pay only for what they get and are willing to pay more for a case weighing 21 lbs. than for one weighing 16 or 18 lbs. [Practically all comb honey west of the Missouri River is sold by the producer by the case. The various grades, however, require certain weights per case and the price is based on weight as well as grade.—Ed.]

IN TEXAS

By F. B. Paddock, State Entomologist

On January 26, Representative Louis H. Scholl introduced in that branch of the Texas Legislature his bill for the establishment, maintenance, and management of experimental apiaries. On January 29 this bill was introduced by Senator Carlos Bee, of San Antonio, into that branch. These apiaries are to be under the direction of the Texas Agricultural Experiment Station, and they are to be located at such places in the state as may be deemed advisable by the Director. An emergency is declared, and it is to be hoped that the bill will make rapid progress. An annual appropriation of $6000 is provided for by this bill for the establishment and maintenance of the experimental apiaries. Untold good will be done the beekeeping industry of Texas if this bill is passed by the legislature and signed by the governor.

* * *

In Texas there are three primary honey-producing sections, and at least three more that are not quite so extensive. It is to be hoped that the apiaries can be located with regard to these areas for the purpose of solving the problems peculiar to each section. The demands of each section will vary from the others in the foundation principles of apiculture. In the northern section the greatest problem of the beekeepers is the spring management. There is usually a good supply of early pollen, and enough nectar from wild flowers, to cause the bees to raise considerable brood. But the dearth that follows up to the cotton flow is so long and severe that many colonies die of starvation, and all are considerably weakened, and consequently are not in the best condition for the cotton flow. In this section many advocate placing the hives in exposed places in order to retard spring activity as much as possible.

* * *

In the central (cotton belt) section the spring flow of horsemint takes care of the spring-management problem. The proper manipulation of outyards in this section demands attention. There are vast areas of cotton in cultivation; and to handle the yards properly to cover the most area should certainly result in greatly increased returns. In the large southwest section it will be difficult to solve the problems by work in a single locality. This section is divided by the honey flora, which will need more study. In one locality spring dwindling causes enormous losses. Immediate study should be given to this problem. In this locality bees worked on peach bloom from January 15th to 25th. Pollen was being gathered in large quantities on January 30 from the elms along the creeks.

* * *

Altho the rainfall in this section is .70 of an inch below normal for January, rains have occurred that did great good. Storms have occurred over the state generally, giving much needed moisture. In some sections snow fell in very unusual quantity. Horsemint has been benefited very much by these rains. Our cultivated horsemint is looking very nice now.

In the extreme western section of the state the bees have come thru the winter in good condition and the beekeepers are looking forward to a prosperous spring.

* * *

In the Rio Grande section the fall honey-flow was so short that it was necessary to feed heavily during the winter. Now the spring flow is on in that section, and the bees have from three to six frames of brood. Inspection work was satisfactorily done in the middle of January in this section.

* * *

Most of the county beekeepers' associations have held their first meeting of the year and have elected officers for the coming year. Many of these associations hold four meetings each year, at such times as will bring up timely discussions on the seasonal management of bees. All of the associations are co-operating with the State Entomologist in the eradication of foul brood.

* * *

More Texas beekeepers will sell bees in pound packages this spring than ever before. In sections where bees build up readily in the spring it is said that such a disposal of bees partly takes care of the natural-increase problem.

* * *

A few of the larger beekeepers in a southwestern county are buying up all the bees that are for sale in that locality. It is evident they are giving little worry that the honey market will be flooded next fall. All evidence seems to point to the fact that some of the smaller dealers have been guilty of keeping the local price down.

FLORIDA SUNSHINE

E. G. Baldwin

TALK about winter weather! At this writing, Feb. 7, we are just emerging from the worst week of weather since 1894-'5. Last Friday night the temperature in this vicinity (29th degree) dropped to 20; and the next night, Saturday, to 14 degrees; and since then we have had frost and freeze, one after another, till today for the first time the keen cutting edge of that northwest wind is losing its sharpness a little. All small orange-trees as far south as Kissimmee are doubtless cut down to the banks. Here many of the large trees are hurt—how badly no one will know till warm weather comes. All fruit is frozen, save possibly some groves that were warmed by fires, and it is doubtful if all of even that is saved. Too bad! Yes, bad; but it might be worse. If the larger trees are saved they will put out new growth with returning warmth, and may even have a crop of bloom and fruit. No use to cross a bridge till one comes to it, nor cry before one is hurt. It looks as if our orange honey would be at a premium this year. Cheer up, brothers! Another year is coming, and other sources of honey are available. Plan right now for bigger things.

* * *

Bees on the East Coast, and along river courses, where early pollen is available, have been building up with phenomenal rapidity. On Jan. 25, at the Wilson yard, we found drones flying from many colonies, and brood in five or more frames. That is very unusual for this vicinity. Drones seldom fly here before the middle of February, and often not till the latter half of that month. This was nearly a month ahead of the average time for drones. The warm month of January is accountable in part, and the excellent condition of the colonies last fall also. I believe strong colonies, with plenty of late-reared bees, and a hive stocked chock full of honey, two stories, will come about as near to insuring big colonies in early spring as anything on earth can do. But early pollen, from nature, is also essential to the most rapid early breeding.

* * *

Honey is well sold in Florida. Nearly all has been disposed of, and very little left. Many beekeepers are asking for more honey to supply their local demand. It is a pleasure to record this fact, and to note the same as being true in most states further north. More honey is being used right here in our own state than ever before. A cracker-factory in Jacksonville will take all that is not fit for table use; and the tables of our hotels and boarding-houses are now offering honey ten times to once a decade ago. All this is as it should be. It used to be said that Florida shipped everything out of the state, and then bought everything back again. Those times are no more. Now for the next crop!

* * *

We have been asked time and again for a booklet of information regarding conditions of beekeeping in Florida. Our peninsular position makes our environment unique, and hence our management distinct and different from that of any other state. Most of the printed matter of our bee-journals and bulletins and bee-books has been written with special reference to states further north. Florida sadly needs a manual especially designed for her own borders. The time seems ripe for such a handbook. It is needed, not only for beginners here, but also for incomers from other states who, tho they understand bees, do not know Florida in relation to bees. If some one does not throw a club at the editor of this department he may be foolish enough to attempt something in the booklet line himself.

* * *

The eucalypts of all northern and central Florida are frozen to the heart. Some of them had reached very commendable proportions, and bees were beginning to notice their blossoms not a little. These trees in this state seem to bloom almost every month of the year, depending on the variety and the soil.

* * *

This is the quiescent period of bees in the high pine lands, and, to a great extent, of those on the East Coast also. In the regions further south, the pennyroyal (*Hedeoma pulegoides*) is yielding, and has been doing so for a month or more. In those sections the bees are building up rapidly, and may even swarm

* * *

Dr. Bonney, December *American Bee Journal,* advises naphthalene instead of carbon bisulphide for keeping combs free from moth, and says that it will even kill the larvæ of the wax-moth. The powdered naphthalene will last much longer than the carbon bisulphide. (*American Bee Journal,* Jan., 1917.)

AROUND THE OFFICE

M.-A.-O.

ECHOES from the great war and its tragedies have frequently reached the office from the far side of the Canadian boundary line during the last two years. A subscriber writes from Kitchener, Ontario ("Kitchener" is boldly rubber-stamped over "Berlin, Ontario," on his letterhead), saying: "Berlin, Ontario, has been wiped off the map of Canada, there being no longer such a postoffice." From another comes this: "I have just received news of my two boys being killed in action in France. I have no heart for my bees longer." And from many Canadians comes word of their going to the front.

* * *

Heard a well-known bee dignitary recently say, right in the open day of the office, that he once attended a state beekeepers' association (of a big state, too) that spent one whole afternoon discussing what kind of fuel to use in a bee smoker—and finally, at 5 P. M., concluded by general consent that every man had better use what he could get hold of.

* * *

If the Man-Around-the-Office could catch, some dark night and up a dark alley, the fellow over in the editorial end of GLEANINGS who promised the new A B C and X Y Z of Bee Culture some time last fall, that fellow would just naturally beg for his life—if he lived at all. That premature promise, in cahoots with a belated printing-plant, are together breaking short off the spinal column of all around the office.

* * *

Some things are right wrong (or partly right). The other day one of our typewriter girls turned this trick. She took off on the typewriter Ernest's dictation from a dictaphone cylinder of the editorial on national advertising, which he had headed "They Say It Has Helped." Dictation on a dictaphone isn't always clear. When the printer's copy had evoluted from the dictaphone via Miss Typewriter Girl, the heading of this editorial on national advertising read, "They Say It's H—." Well, some do, so we hear.

* * *

How many of GLEANINGS' readers are acquainted with Mr. J. H. Donahey, who entertains them with his inimitable cartoons of bee things and situations? You may know that he is the famous cartoonist of the Cleveland *Plain Dealer;* but here is more — a sidelight thrown on him by Cleveland *Town Topics:* "One of the most successful and best-loved cartoonists in this country * * *with a mind that is a bubbling spring of originality and humor, with a heart that loves nature and his fellow-men * * * one of his diversions is the propagation of bees; and in the summer their chorus sings nearby while he may work or play." Yes, Donahey is a likable, lovable cartoonist-philosopher.

* * *

About stopping subscriptions on expiration. Well, a few don't like it, but very many more have written us just as this friend from David City, Neb., has done in these words: "I think you are on the right track at last when you adopt the new rule of stopping GLEANINGS at expiration of paid time. All first-class publications are doing this. It never did look right to me to send the paper beyond the paid time. I go up against that kind quite often, and when I get a statement I say some unkind things that don't do either party any good." We have had scores—and more —of just such letters as that.

* * *

A beekeeper from out the West said within hearing of the office cat the other day: "Frank Rauchfuss, of the Colorado Honey-producers' Association, is getting his now. He has done more for the honey-producers of Colorado than any other man alive. Just now the comb-honey market isn't all it might be—and, of course, Rauchfuss is to blame. When some beekeepers can't kick one fellow they'll kick another." Wasn't the Westerner right?

* * *

A visitor said to Huber Root the other day: "We would have been better off without any bee inspectors. Then the foul brood would have wiped out all the careless beekeepers, and only careful efficient beekeepers would be left in the field." So far as the Man - Around - the - Office knows, that visitor may be alive yet. Huber is, but he still looks shocked.

* * *

There is probably a mad one down in Jonesville, Lee County, Virginia. He sent a rush order to GLEANINGS the other day, but forgot the little detail of signing his name. Others do it. Then—"they're a nice lot, they are—never answer a letter."

CAN THIS BE DONE?

Proof of the alue of a Pollen Substitute in S ulating the Rearing of Bro . Chapter III

By Editors

ONE thing that the great greenhouse experiment has definitely established as a fact, beyond all doubt, is the value of a substitute for pollen in stimulating brood-rearing. Some good authorities have seriously questioned whether a pollen substitute, altho the bees worked on it, was of any real advantage. This has been a difficult matter to prove, for so frequently there are a few cells of natural pollen in the combs that are unnoticed, or else the bees have access to fresh pollen from obscure early blossoms in the field.

Basket at each end of the building holding syrup feeder and a comb of honey.

As explained in the last issue, the one colony in the large greenhouse was destitute of pollen. The combs were looked over again and again, but no trace of it could be found. There was nothing at all except syrup and sealed honey. The queen had stopped laying, and was greatly reduced in size. Rye flour was thoroly dusted over the bees and combs. Altho the bees did not pack this into the cells (probably because not enough of it was given beyond the actual needs), the queen almost immediately began laying. This brood developed normally, was sealed over, and afterward hatched. Since there was nothing but lettuce in the greenhouse at the time, there was no possible way in which the bees could have secured nitrogenous food except by means of this rye flour.

After the brood that had been started from feeding the rye flour had been sealed over, or much of it at least, two combs of natural pollen taken from another colony outside the building were provided. The bees then, being assured of a good supply, began feeding the queen in earnest, and as a result in about two weeks' time she had sealed brood in three combs and had started laying in a third one, skipping the comb next to the three combs of worker brood.

On January 31, with the idea of keeping the worker brood compact, in order that the colony might build up as strong as possible, the drone comb and the outside comb of young unsealed brood were interchanged so that the drone comb would be just outside the worker brood.

On February 6 the queen again extended the brood-nest, jumping past the drone comb, and began laying in another worker comb next to it. The pollen in the two combs was nearly exhausted; therefore another comb of pollen was inserted at the side of the hive. We are expecting to get word almost any day that the queen has started laying drone eggs in the drone comb; but if she does not, we have made arrangements for getting combs of sealed drone brood from the South, so that there will be drones in time for the young queens that will be flying probably in April.

A feeder containing syrup and a comb of honey were hung at each end of the building, nearly 300 feet away from the bees. On January 30 the greenhouse apiarian wrote as follows:

> As I stood for a time watching them, altho the day was somewhat cloudy, the bees would come from the hive, and, without an instant's hesitation, turn, some going to the east and some to the west, and, with a speed too great for my eyes to follow, start for the feed. Those returning made no stop, but went directly into the hive. You see, when they come out of the hive, below them lies a field, practically an acre, of vegetation, and there is a genial spring atmosphere. Why shouldn't they fly?

Each day cucumber seeds are being sown. The young plants are transplanted into pots and, later, set in the large building.

Young cucumber plants to be transplanted later into the large building.

About two-thirds of the greenhouse as the bees see it.

OUR FOOD PAGE

Stancy Puerden

THE managing editor dropped in at the Puerden home one morning while the family were still at the breakfast-table. His hands were full of papers, and on his face was the look which a man wears when he intends to wheedle a favor out of some woman. All married women know that expression. I not only recognized the expression, but I had a presentiment that the papers contained honey recipes. Now, testing recipes is interesting to a certain extent; but there is a limit. Something over a year ago, when the Airline Honey-book was being compiled, this same editor cajoled all his women friends into testing dozens and dozens of honey recipes. He has fewer women friends now. There was rebellion, even in his own household. But I have known him many years; and then, too, the Puerden family are extremely fond of honey—comb, extracted, honeyspred, and honey cookery.

To return to the editor, he wanted help about a food page for Gleanings. It is conceded by all that the most celebrated cooks in the world are men; but if there is anything more helpless-looking than the average man with a cooking recipe in his hand, I have yet to see it. This particular man greeted my half-joking proposition to help him so joyfully, and with such touching confidence in my ability, that I immediately sat down and planned a simple dinner menu wherein honey occurs not only in each course but as an ingredient in practically everything served.

The whole-wheat bread was made with a little honey instead of sugar in the sponge; two tablespoonfuls honey to four loaves of bread.

MENU
Baked ham
Candied sweet potatoes
Fruit salad on lettuce
Whole-wheat bread
Chocolate pudding
Whipped cream

Baked Ham.

1 slice ham, an inch thick; 1 tablespoon extracted honey; butter or ham fat; water.

Place the slice of ham, an inch thick, weighing about 2 pounds, in a baking-pan. Spread it thinly with the honey; dot it with bits of butter or fat trimmed from the meat; pour in water to the depth of ¾ inch, and bake very slowly for two hours. Replenish the water if it cooks away too rapidly. The ham, when done, should be very tender, with the flavor of Virginia sugar-cured ham.

Candied Sweet Potatoes.

3 lbs. sweet potatoes; ½ cup extracted honey; 2 tablespoons butter.

Boil the potatoes; peel and slice lengthwise in pieces half an inch thick. Spread each slice with honey; arrange in one layer in a shallow baking-pan; dot with bits of butter; salt slightly, and bake until delicately browned, about half an hour. It is well to pour a very little water in the pan to prevent the potatoes scorching.

Fruit Salad.

4 large tart apples; 1 banana; 1 orange; ¼ lb. dates.

Peel the apples, banana, and orange, and cut in small pieces. Stone the dates and cut fine. Mix the fruit with a little of the following dressing; arrange on crisp lettuce leaves, and pour over more of the dressing.

Salad Dressing.

1 teaspoon salt; ½ teaspoon mustard; 2 teaspoons flour; 3 teaspoons extracted honey; yolks of three eggs; ½ cup vinegar; 1 cup sweet milk; 1 tablespoon butter or olive oil.

Put vinegar in double boiler to heat. Mix salt, mustard, and cornstarch; add egg yolks and honey, and beat until smooth. Gradually stir in the milk; and when the vinegar is near boiling add the mixture and cook until smooth and thick. Take from the fire and stir in butter or oil.

Chocolate Pudding.

2½ cups milk; 2/3 cup extracted honey; 2 squares unsweetened chocolate; 2 tablespoons cornstarch; 1 egg; ¼ teaspoon salt; 1 teaspoon vanilla.

Put the milk, the chocolate shaved fine, and the honey in a double boiler and bring to boil. In the meantime dissolve the cornstarch in a little of the milk; add the egg slightly beaten, and the salt. Pour the hot mixture over the cold, stirring constantly; then put all in the double boiler and cook until it thickens. Serve in sherbet-glasses with whipped cream.

Beekeeping as a Side Line

Grace Allen

BY way of setting our aim high for this season of 1917, let us consider for a moment the report of one of our backlot friends. Mr. E. J. Thompson, an insurance agent in Andover, Ohio, writes that in 1916 he took off 346 pounds of extracted honey and 452 sections from seven colonies, spring count, and increased to sixteen colonies. The honey sold promptly, the cash receipts being $89.25.

Now by way of forestalling disappointment from blasted hopes, let us for another moment consider another report. Mr. J. C. Parks, a farmer, fruit-grower, and beekeeper of Scottsboro, Ala., writing in the late summer of 1916, says, " The sourwood flow was almost totally lost and the floods have destroyed the goldenrod and aster in the swamps and lowlands. I guess I shall have to feed this fall again. The season set out early to be a good one, the best in years, but the weather spoiled all these fine prospects."

Not having heard from Mr. Parks later, I do not know just how the year did finally come out for him. But the point is that, while honey crops will, of course, be greater or less according to the experience and skill of the beekeeper, it is the season itself and the weather conditions thereof that decide the vital point of whether there shall be any crop or no crop at all.

SUMMER STANDS AND WINTER CASES.

Mr. A. Gordon Dye, of Rochester, N. Y., " a backlotter of only two seasons' experience," as he frankly terms himself, has been making a particular study of convenience and economy in apparatus, and reports in the following extract how he has worked out the winter-case problem.

" A year ago in trying to decide how best to winter my six colonies, I read up on the various ways of wintering, and as a conclusion decided in favor of the quadruple winter case. I built two of these last fall and found them satisfactory for winter protection, but heavy and cumbersome to put up, take down, and store away. So this summer I developed a summer stand which may be readily changed into a winter case. The summer stand is a platform 4 x 4½ ft., resting on legs one foot high. The framework of the platform is made with four six-inch boards, nailed at the corners. The legs, 2 x 4's, 1 foot long, are nailed to the inside of the end boards, set in two inches from the corners. Three narrow boards are then cut to fit crosswise inside the frame, one for the center and one for each end, to be nailed to the insides of the legs and to the side pieces of the frames. This makes a light and strong frame for the flooring, which may be of any material desired or convenient.

" By setting the legs two inches from the outside board, a two-inch square hole is left to receive the lower end of my corner posts when I wish to set up my winter cases. For these cases I take 2 x 4's, 30 inches long, and fit them to the corner sockets by notching away a section 2 in. by 6 in. I then build my sides and ends separate, and secure them in place by hooks and staples attached to the corner posts. The roof is made in two parts with a cleat at each end which fits outside the case. The roof may be covered with prepared roofing material, an overlap being left on one piece to prevent snow and water getting in at the peak.

" In the summer the hives are moved out near the corners for convenience in working around them, but in the winter they are concentrated in the middle and raised on small hive-stands made by nailing two narrow strips, 26 inches long, on top of two boards, 3 in. by 14 in. This allows packing material under the hives, and by laying a couple of boards, separated by cleats, across the front end, a shallow tunnel is provided for the bees, to corresponding slots in the end pieces of the winter case.

" I find cases made in this way easy to handle and store, as there is nothing but flat pieces and none very large or heavy. By removing either side of the roof, two hives become easily accessible."

The overlapping piece of roofing will need to be held down in place, or in stormy weather the wind may blow it back and let the rain beat in anyway. We have had this experience with a similar overlapping piece on an outdoor hopper in our chicken-yard. And the corners of the case, secured by hooks and staples, will need to fit perfectly not to allow the rains to seep in and the packing to become wet.

But this use of the summer stand for the floor of the winter case is certainly good management, and is right in line with what Mr. Bartholomew advocates.

GLEANED BY ASKING

E. R. Root

A. Y. Z., Oelwein, Ia. — Is this a good time to start with bees? What would be the probable cost?

A. This is the very best time of the year to start, not with the bees themselves, but with a preparatory study to fit yourself for the work with the bees in April or May. A beginner having had no previous experience or having no knowledge of the subject at all, is quite likely to make some mistakes—mistakes that are expensive. No amount of study will take the place of actual experience, it is true; but a little reading in advance will ordinarily prevent most of these early mistakes. Bees need very little care, it is true; but the care that is given should be the right kind.

As to the cost, that will depend somewhat upon the way in which you desire to start. We do not advise any one to start with more than one or possibly two colonies. In almost every instance, if some one writes us for advice, saying that an apiary of thirty or forty colonies can be bought for a very low price, we advise buying but one or two, for the bees increase so rapidly that there is really no need of buying a large number at the start. Only an experienced beekeeper should undertake to buy an apiary outright.

Iowa is one of the great honey-producing states, and we see no reason why you should not succeed, whether you keep bees as a side line, or, later on, take them up as a main business.

O. P. H., Floresville, Texas.—How may queens be introduced to bees in pound packages before shipment?

A. The queen may be merely dropped in with the other bees; but if you wish to be doubly sure that she will not be molested see that the bees in the package come from two different sources. They will then have two different colony odors, and will, therefore, not offer to injure the queen.

C. A. C., Lincoln, Del.—My bees are all in ten-frame hives, and are run for comb honey. I also look after the bees belonging to a neighbor who has two eight-frame colonies. He "just wants a little honey," but does not care for any increase. Last fall I put in two young Italian queens for him. By next spring they will, no doubt, be needing more room; and, having two more eight-frame hives and supers, I thought Dr. Miller's plan of a two-story brood-chamber would be a good one to follow. I have his book, "Fifty Years Among the Bees," but he gives many plans. I should like to have him answer the following questions:

1. Can the two stories remain during the heavier and early part of the main honey-flow, say up to July 1, and then reduce to one story? I have no extractor.

2. In reducing the number of combs, how can I let the brood hatch out and at the same time keep bees from storing honey in the cells so I can have those combs for next year, thus keeping the number of colonies down to two?

3. Next year, would the plan of building up work all right if all or nearly all of the extra frames contained drawn comb instead of foundation?

4. I do not see how one can run for comb honey with only two colonies without making some increase, or having some place to distribute combs, as in the shaken-swarm plan.

5. If I were to leave the colonies in two stories most of the summer I would have a lot of the combs full of honey with no honey in the supers. Is this true?

6. When giving another story for brood, do you think it would be safe to put super foundation in two upper and two lower outside frames? These frames would probably be filled with honey, and this then could be cut out for bulk comb honey. Would the bees put pollen in them? My friend has two shallow-frame supers and three comb-honey supers.

7. With ordinary young or year-old Italian queens, is it possible to keep two stories for brood after the main flow opens, or is it necessary to reduce to one story in order to get bees into the super?

8. How would it be to reduce the amount of room with division-boards, so that there would not be over twelve combs in all?

9. I have just seen GLEANINGS for December 1. Is the plan given in second paragraph, page 1130, necessary? Would it not be advisable to use some baits?

10. Please explain the plan of cutting out the cells and placing them in hives, as given in "Fifty Years Among the Bees," page 262.

11. With this method is any nucleus or nursery necessary?

12. In this same book, page 263, what is done with the old hive? Could each swarm be hived on three or four combs and then each old colony united with a swarm put in the place of each?

Dr. Miller replies:

1. Yes, you can leave the extra room as long as you like.

2. I know of no way to keep the bees from storing honey in cells as fast as young bees emerge from them, provided they have any honey to store. But you may accomplish your purpose in this way: Take the extra story of brood, and set it on top of the upper super that is on the old hive, giving this story on top a bottom-board and entrance of its own, so that there is no communication between the two hives. All the field bees will join the lower hive, leaving only young bees that will gather scarcely more honey than they will consume; and in three weeks you can take the upper hive away, brushing all its bees in front of the lower hive.

3. Yes, drawn combs will be as good as if not better than foundation.

4. Neither do I. But if there's no other place for them, they might be piled on a stand of their own, with barely bees enough to take care of them, these bees to be united later with the full colonies. Or you might keep the combs without any bees, fumigating them occasionally. But the very best way to keep combs thru summer is in care of bees.

5. No. In a good season a strong colo-

ny in two eight-frame stories ought to do work in section-supers.

6. It might do in the shallow supers. In the lower story there would certainly be pollen.

7. You will get section-work either way, but generally more with the one story.

8. All right.

9. It is not absolutely necessary to reduce to one story, but it is generally better. At least one bait section is always given in the first super, no matter what plan is used.

10. Cut out the cell with the small blade of a pocket-knife, and fasten it upon the comb with a staple, as shown in Fig. 85 in "Fifty Years."

11. No nucleus nor nursery is needed to produce the cells; but after they are produced they may be used in a nucleus, a nursery, or a full colony.

12. Referring to the book you will see that I say, "put B on a new stand." That may be any place you like—of course, not in the place of any other colony. C and D are treated the same way.

J. C. H., Lowell, O.—1. Last season I gave my bees foundation with splints, also with wire; these they soon gnawed along each side of wire or splints and caused the combs to go to pieces when filled with honey. The bees then rebuilt the comb their own way which consisted mostly of drone-cells. This year I gave some medium brood foundation without wire or splints which in some cases collapsed from weight of honey. What is the trouble?

2. Should I when trying to save a valuable queen by caging give her some candy or will bees feed her thru wire in cage?

3. Should a queen-cell in a wire-cloth cage be provisioned with candy? Some of my virgins which had none died when only a few hours old.

Dr. Miller replies:

1. It is uncertain just what the trouble was, but the likelihood is that at the time the foundation was given there was little or no honey coming in. At such times bees are likely to gnaw foundation, and it should always be given when a good flow is on. Another possibility is that the wires or splints were not well embedded in the foundation. Splints, previously to being used, should be saturated with hot wax.

2. No need of candy if she is caged among her own bees. If caged among strange bees, they sometimes fail to feed her; so it is better to have candy in the cage.

3. It depends on conditions whether a virgin will be fed by the bees and it is safest to have her cage candied.

E. P. W., Chadron, Neb.—If a colony comes thru the winter with a fair supply of honey, enough to last until the first honey-flow, do you recommend stimulative feeding for brood-rearing? If so, what kind of syrup and how much?

A. For stimulating brood-rearing, half a pint of syrup a day is enough; made by mixing one part of sugar to two parts of water. However, if a colony has stores enough to last until the main honey-flow, so that the bees do not have to feel scrimped, we do not recommend feeding. Better let well enough alone; and we believe that in the majority of cases the colonies are in better condition if enough stores can be provided in the fall to last until the next honey-flow the following spring. This plan saves a lot of expensive work besides.

A. R. D., Texas.—Do brood-combs ever get too old to use again? We are told that the cocoons in the cells in such combs become so small that bees will not raise their young in them because of their smaller size.

A. As long as combs are regular, are not disfigured, and are all worker, they can be used indefinitely. When the cocoons accumulate, the bees remove the excess of them, keeping the size of the cells always large enough for the rearing of brood. Old combs are usually preferable for extracting as compared with new ones. While the honey may be a little darker at times in the old combs, it is seldom there is any trouble of that kind. As a general rule, we may say that old combs are the beekeeper's best stock in trade.

B. F. M., Kearney, Mo.—I have been operating my bees without smoke as much as possible, but I find I need it occasionally. When I use smoke it stirs the bees up badly. What is the trouble? Do I use enough smoke? In fact, what is the best way to open a hive so the bees will cluster? I cleared $8.00 per colony with an increase of 50 per cent last year.

A. The matter of using smoke is one concerning which no definite rule can be given, for no two colonies are exactly alike in this respect. Occasionally bees can be handled better without smoke. In general it is a good plan to make a practice of using a little smoke just before the bees begin to crawl up between the top-bars, in order to avoid letting an angry bee fly out at you. If one bee starts, others are likely to follow, and it is far better to prevent these angry bees from getting stirred up than it is to conquer them after they try to sting.

H. W., Spring Mills, Va.—In moving an apiary about fifty yards, at this season of the year, would there be any danger of the bees ever going back to the old stand?

A. After settled cold weather comes when there are no warm days or fly days you can move bees a short distance in the beeyard without very much trouble, altho if you should have a warm day within two or three weeks after moving the bees there might some of them go back to the old stand. You would need to look carefully to this at the time the bees are flying; and if so, pick them up in a bunch and carry them back to the new stands.

D. B. C., Illinois.—What is the white substance on top of extracted honey that has been heated?

A. It is a sort of foam, consisting of minute bubbles containing either air or gases, sometimes seen on top of honey in a sealed bottle.

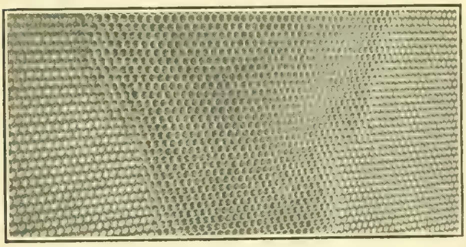
BEGINNERS' LESSONS

H. H. Root

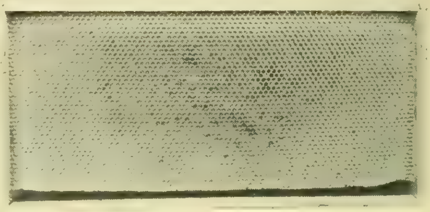
LESSON NO. 2.—THE INTERIOR OF THE HIVE

IN Lesson 1 we considered the various parts of the bee-hive. We found that the average hive consists of six parts — the hive-stand, the floor, the hive-body, or brood-chamber, the super, the inner cover, and the outer cover. The brood-chamber, which might be called the living-room, is the most interesting part of the hive. That part belongs to the bees themselves, and it is very rare that the bee-keeper takes away any of the honey which it contains. The honey there is for the bees' own use. The surplus honey is stored in the "super" above the brood-chamber. In this lesson we shall consider the interior of this brood-chamber, the combs in which the brood is reared and in which the bees store the honey, and something concerning the early life of the bees themselves.

Many beginners ask where the bees get the wax—whether they gather it or make it. Beeswax is a secretion that issues from the wax-glands after the bees have been feeding heavily on honey or on sugar syrup. It is really a fatty secretion, altho beeswax itself is not a fat and is not greasy. The opening to these glands is on the under side of the bee's abdomen; and when the wax first issues it is a liquid which soon hardens into pearly-white scales. The bees transfer this wax to their mandibles; and by mixing it, or masticating it, so to speak, it becomes the pliable and ductile substance used in making the combs. There are many mineral and vegetable waxes that resemble beeswax; but for its ductility beeswax has the highest melting-point of any wax known. If the honeycombs were made of paraffine, for instance, they would not stand the high temperature in the hive, especially on a hot day, but would sag or melt down.



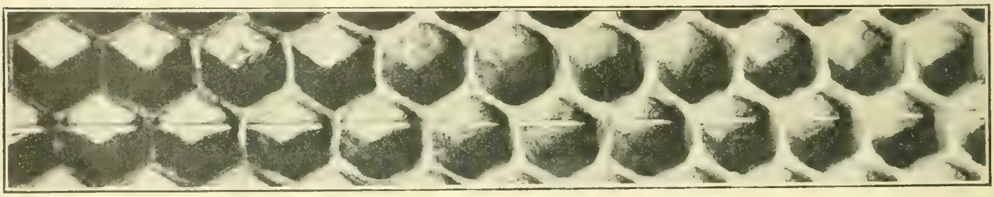
A full-sized sheet of comb foundation which the bees have just begun to draw out into comb. The central part shows the deeper cells.



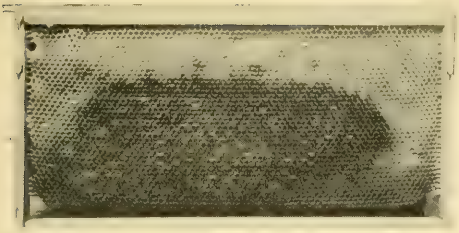
New comb just built. It is creamy white save for an occasional cell containing a little pollen or bee-bread.

It has been estimated that bees must consume from five to fifteen pounds of honey in order to produce one pound of wax. As explained in the last lesson, in the production of extracted honey the combs are used over and over again, so that the bees do not have to build new ones each time. In making comb honey in the small sections, the comb is sold right with the honey, of course, and the bees must necessarily build new combs when the finished sections are taken away. For this reason a colony of bees can produce only about half as much comb honey as they could of extracted honey.

For more than forty years what is known as "comb foundation" has been used by practically all beekeepers. A very thin sheet of wax is run thru two metal rollers on which is stamped a representation of the base of the cells of the honeycomb. When the sheet of wax is run thru these rolls it



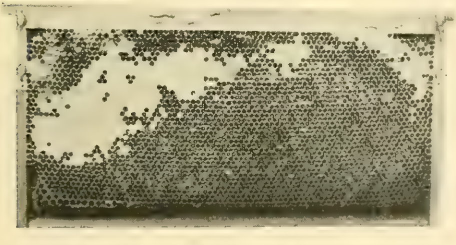
An enlarged view of comb foundation. At the left the wax is shown just as it comes from the rolls; the cells on the right have been partially drawn out by the bees. The reinforcing wire is shown at the base of the cells.



A comb that has not been in use very long. The upper part that has contained honey only is still white. The lower part, where the brood was reared, has turned dark.

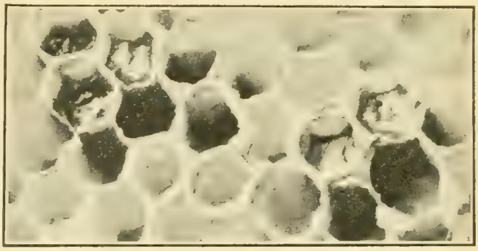
becomes what its name implies—a foundation for the comb. The bases of the cells are formed, and the side walls are started. The bees grasp these very shallow walls and "draw them out" and build on with new wax, the work being so perfectly done that it is impossible to tell where the old wax leaves off and the new begins. This comb foundation is used in the small section honey-boxes as well as in the large frames in the brood-chamber. It serves a double purpose: it furnishes a good deal of the beeswax required for building the comb, and it also centers the comb in the frame or section as the case may be, and compels the bees to build it straight. As a rule, bees would just as soon (in fact, a little rather) build the combs crosswise of the frames or sections, and also curve them or make them crooked, thus adding to their strength. In the large frames, in order to prevent the combs from sagging or from breaking down when filled with honey or brood, fine horizontal wires are imbedded in the comb foundation; then, even tho the combs later on be extracted in the centrifugal honey-extractor mentioned in the last lesson, there is little danger that they will be broken out of the frame. No matter how perfectly the base of the cell is formed by the roll, the bees alter it slightly, making it a little thinner and a little more granular in appearance.

When the comb is first built it is creamy white in appearance. It very soon becomes "travel-stained," however—that is, the bees in walking constantly over it and over the fresh propolis (the pitchy substance which they gather from certain buds) soon stain the white wax so that it has a brown color.

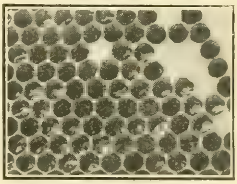


After a comb has been in use a year or two it becomes almost black. This, however, does not detract from the value of the comb in the least. (The white part is capped honey.)

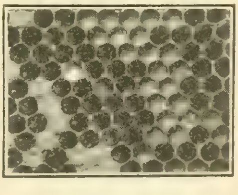
Moreover, as soon as a few generations of brood are reared in the cells the comb becomes quite black, and in time black all over. This is no indication that it is not perfectly good, however, for combs have been in use continuously for thirty or forty years. The older they are the tougher they become, owing to the many layers of cocoons.



Pollen or bee-bread in white comb. The bees pack the pollen in the cells, for future use. They never entirely fill the cells, therefore if a cell is partly full of a semi-hard dark substance, it is almost sure to be pollen.



Pollen and capped honey in old black comb.



Capped brood in the cells at the left, pollen at the right.

Bees do the greatest service to mankind in pollinating fruit-blossoms. They fly from blossom to blossom and carry the pollen from one to another so that cross-pollination is accomplished far more effectively than could be done by the wind. A part of this pollen the bees carry to the hives packed in huge pellets on each of their rear legs.* This pollen furnishes the nitrogenous food for the bees themselves but more especially for the young larvæ. Without it brood-rearing can not be carried on; and if there is no natural pollen, substitutes sometimes have to be provided such as rye meal or bee flour. On page 188 is an illustration of bees working on a substitute for pollen.

A good queen is able to lay two to three thou-

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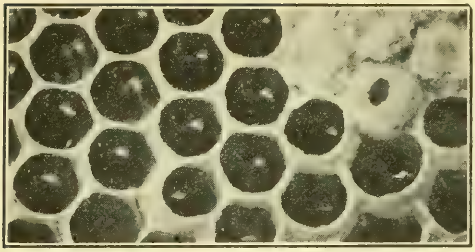
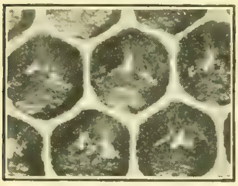
* See the picture on the cover of this issue.



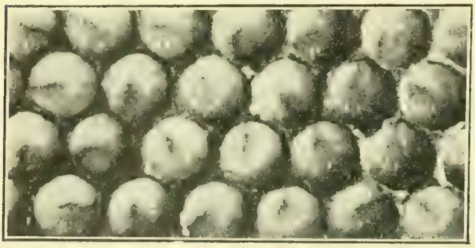
Unsealed, partially sealed, and fully sealed honey. Capillary attraction prevents the unsealed honey from running out.

sand eggs in a day. In fact, the eggs that a prolific queen can lay in twenty-four hours, if all put together and weighed, would equal nearly two and a half times the weight of the queen herself. This is possible only by reason of the fact that the queen is fed almost constantly by the bees. The eggs are about the diameter of a pin, and when the light is just right they are plainly visible fastened to one side of the bottom of each cell. The brood ordinarily occupies the lower part of the comb, the honey being above it. A good queen starts laying in the central part of the comb and extends her laying in the form of a circle so that the brood is always compact.

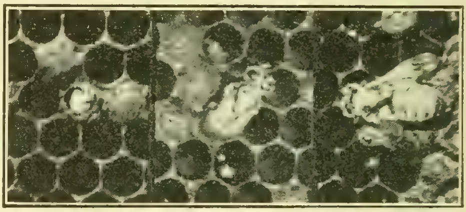


Eggs laid by the queen-bee are always in regular order, uniformly attached to the bottom of the cells. Ordinarily the eggs are not as plainly seen as would appear from this photograph; for the cells, nearly half an inch deep, cut off much of the light.

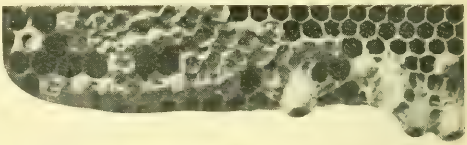
In three days' time the egg hatches into a tiny larva scarcely larger than the egg itself. It is abundantly supplied with the milky chyle food by the young bees which act as nurses for the first two weeks of their lives, and under this care it grows with astonishing rapidity. In about three days from the time the eggs hatch, the larva is so large that it almost completely fills the bottom of the cell. In another three days it stretches out lengthwise in the cell, and about that time is sealed or capped over with a dark-colored capping made of fibrous material, usually refuse wax gathered up about the hive. This capping appears almost like solid wax, but is really quite porous in order to provide air for the rapidly developing bee inside. In eighteen days from the time the eggs hatch, or twenty-one days from the time the egg was laid, the bee, now perfectly developed, begins to cut thru the capping, and within a short time it struggles out—rather wrinkled and pale-looking, but fully developed—a mature bee. All day it crawls unsteadily over the combs, jostled about and unnoticed by the other bees, apparently, and then it finds a cell of honey and begins to feed. From this time on it acts as a nurse-bee, taking care of the larvæ, secreting the chyle food, and helping to keep the brood warm. After two weeks it takes up the duties of a regular field-bee.



Larvæ four to five days old, curled up in the bottoms of the cells.



Worker bee gnawing the capping of the cell, climbing out and crawling unsteadily over the comb.



Sealed worker brood, sealed drone brood, and unsealed queen-cells (at the right).

The queen is the only true female in the hive. The workers are undeveloped females; the drones, the males. Normally there is but one queen in the hive even tho there be as many as fifty thousand workers. The queen mates only once but is able to lay fertile eggs thereafter at the rate of several thousand a day for the rest of her life. Queens sometimes live six or seven years but usually they are not kept longer than two or three years. The drones do no work, their sole purpose being to fertilize queens. In order that there be plenty of them, however, at the time the young queen takes her flight the colony may contain quite a number of drones—sometimes hundreds.

JUST NEWS

Editors

THE Montana Beekeepers' Association held its annual meeting at Bozeman, Feb. 1, 2, 3. The following officers were elected: President, B. J. Smith, Jr.; Vice-president, H. E. Tolliver; Secretary, H. E. Clift.

* * *

Word comes from Idaho (Feb. 10) that bees have had a flight and are in fair condition, altho the winter has been colder than usual and more prolonged.

* * *

The National convention at Madison adopted a resolution to stand by President Wilson in the war crisis, and this resolution was wired to Washington.

* * *

At the Washington State Beekeepers' convention, held Dec. 20, 21, the following were elected to hold office for 1917: President, J. B. Ramage, North Yakima; Vice-president, J. B. Espey, Chehalis, Wash.; Treasurer, H. L. Hart, North Yakima; Secretary, G. W. Rolin, White Swan, Wash.

* * *

INDIANA CONVENTION.

We are requested to announce that there will be a one-day beekeepers' meeting on March 9, at Washington, Ind. This will be held under the auspices of the Indiana State Beekeepers' Association, and it is hoped to have more of them if this is a success. The program has been prepared.

* * *

THE MASSACHUSETTS CONVENTION DURING FARMERS' WEEK, MARCH 27 TO 30.

Concerning the annual beekeepers' convention, to be held during Farmers' week at the Massachusetts Agricultural College, Amherst, we would say:

The novel feature of the year is the devotion of one session, namely, Tuesday afternoon, March 27, to the discussion of the value and uses of honey in the home and in cookery. Miss B. E. Shapleigh, of Columbia University, will give the cooking demonstrations. Dr. Gates will prepare for exhibition a collection of type honeys as well as of some brands. This is presumably the first effort to introduce honey for home consumption by means of Farmers' week or thru college-extension work.

The program has not as yet been prepared. The sessions will open, however, Tuesday, March 27, at 9 A. M., and continue until Thursday noon. A number of prominent speakers are being engaged. The Thursday program, beginning at 9 o'clock, will include a joint meeting of the Hampshire, Hampden, Franklin Beekeepers' Association, Mr. O. M. Smith, of Florence, President, under whose auspices the program will be conducted.

* * *

SEVERE FREEZES IN FLORIDA.

Reports show that the cold weather has gone down the coast and into Florida, where it has done much damage. Severe freezes have occurred in and about Jacksonville, and the cold has gone down clear below Tampa, where, it is claimed, frost never goes. A. I. Root, at his winter home in Bradentown, in a letter dated Feb. 6, writes: "Our nice garden is all frozen, and almost everything killed. We are planting it over."

So far as we have learned, the frost has not been severe enough to damage the orange-trees themselves, altho the fruit has been frozen where it has not been picked. What effect this winter is going to have on beekeeping in Florida is yet to be determined.

* * *

MEETING OF THE NORTHWESTERN KANSAS BEEKEEPERS' ASSOCIATION.

The Northwestern Kansas Beekeepers' Association was formed at Manhattan, on Jan. 22, with a membership of 21. A constitution was adopted, and the following officers were elected. President, D. Von Rieson, Marksville; Vice-president, John W. Lewis, Manhattan; Secretary and Treasurer, Harry A. Huff, Chapman; and two directors—Samuel Winsor, of Wakefield, and C. H. Failyer, of Manhattan. A petition was prepared and sent to the Kansas Legislature, asking them to vote for an appropriation of five thousand dollars for the next two years for fighting foul brood in the state.

* * *

THE OHIO STATE CONVENTION.

The Ohio State convention, held in one of the buildings of the State University in Columbus, Feb. 1 and 2, while not largely attended, was one of the best meetings at which we have been present. We had the honor and pleasure of having Mr. R. F. Holtermann, one of the best honey-producers on the continent, present, and also the two Misses Fowls, who, with their father, are largely engaged in keeping bees at Oberlin, Ohio. Both Mr. Holtermann and the Fowls girls were kept on the platform answering questions; and the replies received were exceedingly interesting and valuable.

The report of the Ohio inspection work by Inspector Ames showed that excellent work had been done in the control and elimination of bee diseases.

The convention was held during farmers' week; and it was apparent that many beekeepers who were also farmers were attending some of the other conventions —probably having a large interest in actual farm work itself.

* * *

OHIO STATISTICS.

Mr. John Eckert, a student in the apicultural department of the Ohio State University, Columbus, is gathering beekeeping statistics of Ohio bees and beekeeping. He is sending out blanks, and earnestly requests that Ohio beekeepers co-operate in giving him the necessary data. As soon as he can collect such data he will give the result to the general public.

* * *

THE NATIONAL CONVENTION.

Despite severe weather and interrupted railroad facilities, the National Beekeepers' Association held its 47th annual convention at Madison, Wis., on February 6, 7, and 8, with about threescore earnest beekeepers in attendance. On the day before the meeting a number of prominent beekeepers over the country received a telegram from President Francis Jager saying that no trains were moving between Chicago and Madison, on account of storms. This telegram led those who received it to conclude that the meeting would have to be called off, and so they did not attempt to reach Madison. This, undoubtedly, accounted for the absence of such prominent beekeepers as Morley Pettit, E. D. Townsend, Frank Pellett, B. Copenhaver, and others. We know for a certainty that it accounted for the absence of E. R. Root, who was already on his way when the telegram (forwarded) overtook him and he returned home.

The reports of this meeting that have reached us are all of an enthusiastic nature. Wesley Foster (of GLEANINGS' staff) from Boulder, Colorado, attended, and this is the way he characterized the meeting: " What a meeting it was! The most animated of discussions, and not a minute wasted! All was harmonious, and there was no attempt to dictate; and the unity of purpose presages a useful and truly national association. The wandering in the wilderness has apparently ceased, and we have hit the trail. Every one of us is wiser; and those of us who are not wiser will not be able to hinder further progress. The meetings were all devoted to business and business only. This does not mean that the National Beekeepers' Association is going into business and incur debt—not at all. But it is going to enter business sufficiently to benefit its members."

Officers were elected as follows: President, Francis Jager; vice-president, D. C. Polhemus; secretary - treasurer, John C. Bull; executive committee, Francis Jager, D. C. Polhemus, John C. Bull, F. E. Millen, and W. M. Copenhaver. Mr. Millen and Mr. Copenhaver hold over one year.

The work of the National is now divided into three principal activities as follows: Industrial; educational and scientific; and legislative. President Jager appointed chairmen of these divisions as follows: Industrial, D. C. Polhemus; educational and scientific, Dr. E. F. Phillips; legislative, Frank C. Pellett. These chairmen are to select their own assistants.

The National is to print its own annual report, which will be sent to its members, and may print quarterly bulletins or circulars as need arises.

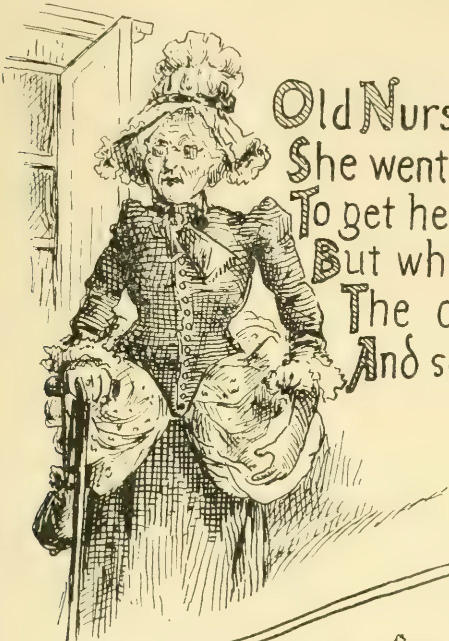
Among other notable beekeepers present were Prof. Francis Jager, C. P. Dadant, Dr. Leonard, Dr. E. F. Phillips, Herman Rauchfuss, E. G. Brown, Miss Fowls, John C. Bull, D. C. Polhemus, and Hamlin Miller. There were threescore other equally earnest beemen there. Prof. Jager in his address dwelt on the necessity for a new life and larger field for the National. Dr. Phillips told of the Government's work, especially in extension activity. " Ham " Miller told of how his " bee pep " was building the Iowa association. Dr. S. A. Jones, of the Bureau of Crop Statistics, told of his plans for securing honey-crop reports and circulating these reports among the beekeepers to their very great advantage. The banquet held at Park Hotel, Wednesday noon, was a decided success, 62 being present. It was full of good cheer, and helped to promote the most cordial spirit of fellowship among all present.

One drawback to the convention was the crowded condition of the hotels, due to the usual activities of a state capital during a legislative session.

The whole meeting was marked by great enthusiasm and the expressed determination of all to make a better future for American beekeepers.

Mother Bee NURSERY RHYMES,

By M.G.P. (Mother Goose Plagiarized.)



Old Nursebee Hubbard
She went to the cupboard
To get her poor brood some bread
But when she got there
The cupboard was bare,
And so the larvae are dead!

HONEY
FOR SALE

Mistress Mary
quite bee-wary,
How does your beeyard grow,
With smoker and veil,
and honey for sale,
And pretty hives
all in a row.

HEADS OF GRAIN FROM DIFFERENT FIELDS

War in the Spring

BY GRACE ALLEN.

("By spring we too may be at war."—Press Dispatches.)

With gay young songs on her ancient lyre
The garlanded spring will come.
For the lure of a flower and a sun of fire
The bees will quiver and hum.
But my heart, for all its dream and desire,
Is cold today and dumb.

There are voices across the dew-sweet land
Like summoning bugles of old.
My quick breath stops, and a sudden hand
Against my heart I hold.
For hearts that hear and understand
Are dumb today and cold.

At war in the spring? When wild bees wing
Thru murmurous orchard and lane?
Tho men that have died, great dreams to bring,
Have never died yet in vain,
Yet the pity of death when robins sing
In the hush of a warm spring rain!

◆

Operating Diseased Bees on Shares I have sold my bees in Colorado, and will locate here next spring and commence to build up a yard. I shall have extra time, and am desirous of leasing a yard. The owner has about 60 colonies. He runs for extracted, and has discovered that he has foul brood, and knows next to nothing about its control. What share of the crop would I be justified in asking on a one or two years' lease, providing I do my best to clean up the yard?

Herbert W. Gaines.

Redington, Neb., Dec. 19.

[The usual rule where bees are kept on shares is for one party to furnish all the labor and the other to furnish the bees, hives, and equipment; but the expense of all shipping-cases, sections, comb foundation, bottles, and tin cans is to be shared equally by both parties. All increase is to be kept down, and the operator is to double up the colonies and put them in as fine condition as possible for winter. In the case you mention, if the owner has foul brood the operator should receive at least 60 per cent of the honey and possibly 75, because there will be some extra work, and the crop will be cut down somewhat by reason of the disease. We would say in this case that it would be fair for the owner to receive only 25 per cent of the crop while the operator would receive 75 per cent. The expense for special supplies should be borne in about the same proportion, owner paying 25 per cent and the operator 75.—Ed.]

Some of the Ways in Which We Have Used Honey * We find many ways in which honey improves food. A tablespoonful of honey in the muffins for breakfast decidedly improves them and causes them to take a beautiful brown, and it gives bread a moisture that improves its keeping qualities. A dessertspoonful of honey in any cake recipe improves the cake and keeps it moist much longer. A small amount of honey vinegar and a little soda will improve the cake or muffins where baking powder is used, and less of the latter is needed. The soda should be dissolved in water, then poured into the honey and vinegar, stirred into the thin batter while effervescent, and then the rest of the flour added. The cake will rise in a surprising manner. If the housekeeper will use a little honey in cakes it will prevent its falling.

The honey cereal coffee given in Gleanings is splendid. We use it the year thru with a small amount of the best coffee added, and we like the combination very much. This recipe should be modified, however, by leaving out the egg. There is no value or flavor in browned albumen.

Honey is cheaper than sugar, and now is the time to introduce it. It costs money to get this information before the people, and this can best be done by associations. I would suggest that they do this by placing recipes for the use of honey where people will see them, talking the matter over with friends, neighbors, and those we meet, and then placing the honey where it is readily reached. If this is done as it should be the demand for honey will be so increased that there will soon be a ready market for all the honey produced.

Caldwell, Idaho. W. L. Porter.

◆

What Controls the Time and Degree of Granulation? On page 45 of the January issue Dr. Miller questions P. C. Chadwick's statement to the effect that the riper the honey the less it will granulate. The editor adds that it is generally believed unripe honey will granulate quicker than ripe honey. To my mind this does not answer the question. It seems to me these are two distinctly different propositions.

It is an admitted fact that some honeys do not granulate. I have some unfilled sections partly capped over, left from early last season, which have not yet granulated, and I had some goldenrod honey that granulated within a very few days after it was extracted, and this was thoroly

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* Condensed from a paper prepared by Mr. Porter for the last meeting of the Colorado Honey-producers' Association.

HEADS OF GRAIN FROM DIFFERENT FIELDS

ripe (fully capped over) when extracted. This honey when liquefied has a sparkling amber color, and is so thick it will hardly run at all. When we want to eat it we take a spoon and " wind up " what we want. In the granulated condition it looks like good butter, only it is a little more solid.

We have honey here that does not granulate. It comes from a rather small tree called the sourwood. I have never known it to granulate. There is a reason. Who can tell whether this honey has something in it to keep it from granulating or whether there is nothing in it that will granulate?

New Richmond, Ohio. Houston Scott.

[Technically speaking, Mr. Chadwick's proposition and our own are different, and yet the same condition that permits slight granulation also causes the granulation to take place but slowly.

Briefly speaking, honey is a complex substance. The amount of dextrose determines the degree or rapidity of granulation. Honeys containing high percentages of levulose or dextrin, which are non-granulating, granulate slowly or not at all, depending upon the amounts present. If honey were composed of dextrose entirely it would become perfectly solid and dry. The substance that might be obtained by evaporating the moisture in honey would not be honey, and probably could not be sold as such. Certain honeys, like the sage of California and tupelo of Florida, containing a high percentage of levulose, do not granulate, because the influence of the levulose is stronger than that of the dextrose.

Of course agitation and alternate high and low temperatures hasten granulation. Other things being equal, honey that is extracted, because of the agitation and the introduction of bubbles of air, will granulate more quickly than honey which is not extracted.—Ed.]

Plenty of Drones as Well as Brood in November

Early in the fall of 1916 I purchased a golden Italian queen from J. B. Brockwell, Barnetts, Va., and introduced it to a colony of blacks after destroying the old queen. She commenced laying in due time, and kept it up at a rapid rate until about the middle of November. In the mean time there was no honey to be had from any source. About November 15 it turned very cold—almost zero weather; in a few days the weather began to moderate, so the bees were seen flying from some of the hives, and I noticed a large pile of dead brood in front of this hive—drones and workers in all stages, some about ready to hatch out. The brood became chilled and the bees dragged them out.

Is this a common occurrence when goldens are purchased from the South and shipped North? I have other queens—the three banded from the South, and they all stopped laying early in October, when there was no honey from the field, and the weather began to get cold; but this queen kept right along laying. It is a strong colony now, but I am afraid they will run short of stores. The hive was not very heavy when they were put into winter quarters.

Romeo, Mich. C. C. Chamberlin.

City Beekeepers in California and a Lot of Them

I live at the outskirts of the city, altho it is built up close all around us. All the lots are 25 x 100 feet, and there are very few empty ones. In the five or six blocks nearest to me I venture to say there are at least 20 to 25 colonies of bees per block.

About half a mile away to the eastward there is a large forest of eucalyptus-trees, also some sandy hills where more or less sage is to be found as well as lupin and numerous wild flowers. There are also a good many acacia-trees growing which bloom heavily in the season. The eucalyptus blooms steadily from March 1 to June 15. We get our surplus from this source.

I have two colonies, one Italian and one black. On Jan. 31, last year, I fed both colonies sugar syrup for three weeks and they built up wonderfully, as they were quite weak after the winter. The hives were just boiling over with bees at the right age to go to the fields by the time the eucalyptus began to bloom well. From the two colonies I secured 250 sections of fine light-amber honey, also sixty small individual sections, four of which take the place of one 4 x 5 section. I sold all the honey at 20 cts. per section among my friends and acquaintances.

About the middle of June, having just returned from a trip out of town I found that one colony during my absence had swarmed. It was then late in the evening, and I wanted to find out which hive the swarm had come from. I put on my veil and gloves and started to investigate. As it was late and cool, and a fog coming on, the bees did not fly much but just crawled around all over my legs, under my coat, and into my veil. I had neglected putting the veil under my vest. In a very few seconds I had my veil full of bees which were stinging to beat the band. I rushed for the bathtub and dived

HEADS OF GRAIN FROM DIFFERENT FIELDS

in, thus drowning the bees. Next day I counted over 500, and there were more. Altho badly stung, my enthusiasm was not dampened, and I am not in the least afraid. I hope to be able to repeat my successful honey crop next year. Scott A. Ray.

San Francisco, Cal.

* * *

Nine Hours at 130 Degrees Didn't Hurt the Honey

I was surprised to read on page 1088, Nov. 15, that honey heated to 130 degrees and kept at that temperature four or five hours would be darkened in color. Having seen repeated recommendations to use a lower degree of heat than 160 degrees, about midsummer I divided a sample of new, light-colored honey in two portions, one of which in a bottle set in a dish of water over an oil-stove by which the heat could be nicely regulated I kept at a temperature of 130 to 133 degrees Fahr. for nine hours. When cold, neither I nor others to whom the two samples were submitted could tell by taste or sight which of the two samples had been heated. The same is true today, except that a close inspection of the unheated sample shows very minute granules, the commencement of granulation, while the heated sample is as clear as at the first.

Westville, Ind., Dec. 1. E. S. Smith.

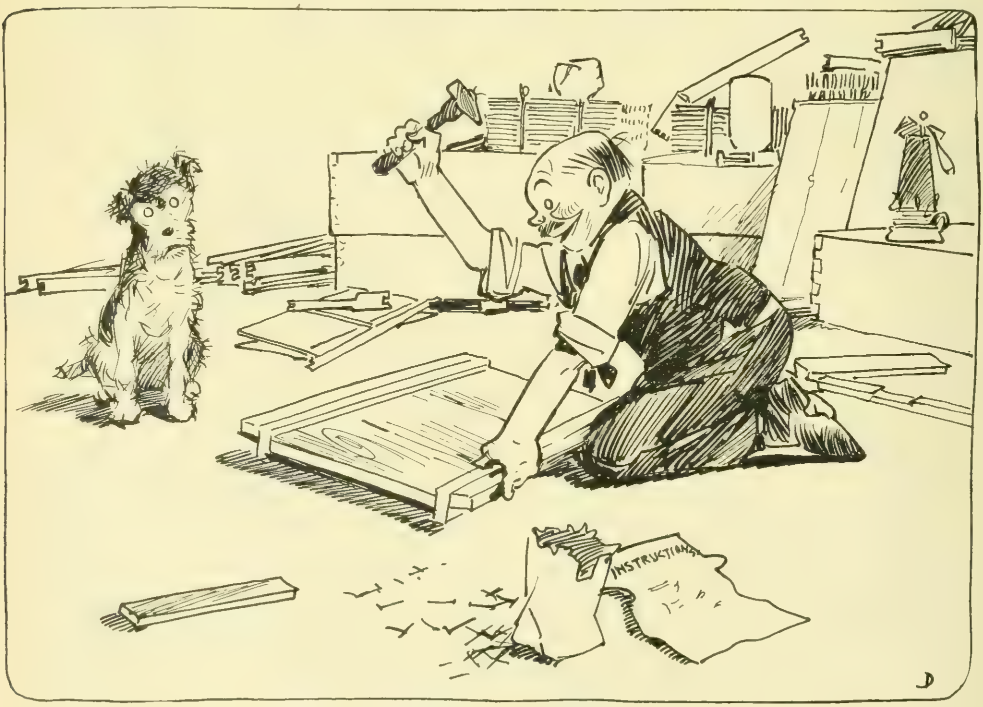
* * *

Brood-rearing May Cause a Shortage of Stores

I have 330 colonies of bees in ten-frame Langstroth hives located in and around Colquitt on one of the tributaries of the Apalachicola River. I produce extracted honey exclusively. This has been an unusually warm winter. I have seen men around town in their shirt sleeves today, Jan. 10. I was out at one of my yards today, and noticed young bees taking their first flight. I examined the comb, and found brood-rearing progressing rapidly. I noticed bees bringing in pollen some days ago, but am unable to locate its source.

I feed my milch cows cotton-seed meal, and have a considerable amount on hand

Continued on page 226



THE BACKLOT BUZZER.

BY J. H. DONAHEY

Billy Appleblossom was over and says his grand-pa is patiently watching at the sitting room window these days. Just as soon as the bees come out for a frolic he says he's going to venture outside.

OUR HOMES

A. I. ROOT

Thou shalt love * * * thy neighbor as thyself. — Luke 10:27.

And who is my neighbor? — Luke 10:29.

Look not every man on his own things, but every man also on the things of others. — Phil. 2:4.

THIS is Christmas day; and may God bless the message I feel he has given me to send to you. Most of you have read more or less about my Eglantine chickens. Well, when that pullet commenced to lay when she was only four months and eight days old it occurred to me that she and her sister pullets would be of interest at our Medina Co. fair; and it occurred to me further that the good people down in Florida would also like to see them at our Manatee Co. fair; and to exhibit them in good style I planned to have our hive-factory make a nice cage for the exhibits, and to use this same cage to ship the whole by express when we were ready to go to our southern home. Later on, as you may recall, this same "youthful mother" came off with a bright family of chicks, and, therefore, this fine cage nicely painted (inside and out) was divided off so as to have three compartments—one for the fine rooster (tall enough so he could stand upright with his seven pullets), and right alongside a *two-story* compartment. The upper part was for some half-grown chicks, and the lower one for the precious pullet and her brood. You see I set every egg laid by the Eglantine, and the result was I had in the cage to be expressed 21, big and little. They were started Tuesday, Nov. 14; but altho I was on hand at every arrival of the train, "no chicks" up to Saturday. I had planned to go up Saturday evening; but as a colored drayman promised to be on hand *sure*, even if the train was late (if they came he was to bring them down *at once* to our place), I trusted to him. As I saw nothing of him, I concluded none came; but what was my surprise to see him, about 9 o'clock Sunday morning, dump my precious cage down on the porch in a most dilapidated condition, *upside down!*

I had provided an ample supply of different kinds of grain, and on a card asked express agents to keep water in the three water-dishes; but if you had seen the seventeen remaining chickens *drink* you would have decided they hadn't had a "drink" for almost a week. They kept drinking almost the whole forenoon. All finally "fetched up" but one. The agent gave me a statement saying the cage came to him in bad condition, so there seemed nothing to do but to make a bill to the company for the loss of four half-grown chicks and smashing up my fancy cage, made on purpose for an exhibit at our coming fair. The extra cockerel sent down some time before, I valued at $10.00. I paid $5.00 express charge in *advance* in order to have the whole rig handled carefully, and we bolted some iron handles on each end of the cage so it could be readily lifted carefully, even by one man. One end of the cage was mashed "all to splinters," and had been "cobbled up" and tied up with ropes, etc., on the way. Of course the company should pay for their careless work, I argued, and so would almost anybody else; but let us pause a little. On page 212, March 1, I spoke of Trumbull's tract, "The Victorious Life," and quoted as follows:

"The life that is Christ reveals to a man a score of sins and failures in himself where he saw only *one* before."

I said there, on Feb. 3, that I had made a little start on "The Life that Wins." Well, I have been trying to hold to it now for almost a year. When I considered making out a bill for damages against the express company, conscience began making a protest. "What would *Jesus* do" were they his chickens? *He* said, "Thou shalt love thy neighbor as thyself." Are the express companies my neighbors? Think of it, friends. Have we been treating them as "neighbors"? My good friends of the *Rural New-Yorker* have been showing them up (*perhaps* as they deserve); but is there not something to be said on *their* side as well as on ours? We all know that the way to have good neighbors is to be neighborly ourselves. After summing up how they have damaged me, suppose I go over the ground *again* and try honestly to see how much *I* have been to blame. All right, here goes.

No. 1. First, I told our workmen at the factory to make the "cage" as light as possible so as to save express charges. I have just measured a splinter from the broken end. It is only ⅛ inch thick for a shipment of over a thousand miles.

2. I was not on hand when the chicks came, because I was "too tired." Who knows but that the colored man, by his awkwardness, let the two live ones get away? When he dropped it upside down on the porch, two got out and we had to chase them.

3. I now recall that I put two older chicks in with the hen and chickens; and Mrs. Root said before they started, "That hen will surely kill the two that do not belong to her." But I replied, "Oh! she will let up after a little." Were not the two dead ones found in the cage these two? They were about the size of them.

4. In watching shipments of chickens in the large cities as we came thru, I noticed all crates were strongly made, and low and flat, not permitting the fowls to stand upright. On this account the handlers of "coops," in the hurry, forgot to notice that *my* crate was to stand upright, and turned it over on its back like the rest, spilling the food, water, etc. Was I not at least somewhat at fault in not conforming to custom?

5. Was I not further at fault in putting 21 chickens, of three different ages, all in one crate instead of having three small crates for so long a shipment?

I might go on, friends, still further. This incident illustrates how the shipper, if he wishes to be fair and "neighborly," can view both sides of the question when it comes to discussing "damages" while the company has to guess at what I have owned up in the above.*

Somebody has said, "Corporations have no soul." Is it not largely *your* fault and *mine* that it *is* so? Have you not noticed the growing fashion of sueing for damages? I am told that there are a lot of so-called lawyers who make it their business to go to people who have suffered, and offer to "sue" for half the proceeds if successful. Is it not true that if we, as a people, loved our neighbors as ourselves, even "just a little bit," the wicked war over the seas would never have been started? And would it not be still *more* true if we only recognized every poor soul *in trouble,* no matter on which side of the world he lives, as "*our* neighbor"? I think I can see this "cruel war" is in some way helping to bring the above to pass.

"Oh glorious victory" that is coming, coming, *coming,* when we shall be neighbors to *everybody,* and everybody neighbors to us—the victory that overcometh the world!

TRUE AND FALSE PATRIOTISM, FROM A COUPLE OF "MOTHERS IN ISRAEL."

Mr. A. I Root:—Quite recently mother sent me a clipping taken from Gleanings. It was an article in regard to patriotism, which I heartily endorse. I have for years viewed national patriotism as a sort fanaticism, a breeder of mischief. It is a form of self-exaltation and misappreciation of others. It must come to pass according to Isaiah 9: 6, 7, that "the government shall be upon his (Christ's) shoulders;" his is the only flag or banner that can unite humanity. He is the one great magnet or force that can "draw all men" without causing friction of the units. When the angels proclaimed the fact of his birth, his mission on earth was heralded thus: "Peace on earth, good will to men."

I think the root of the trouble is too much *theoretical* and not enough *practical* Christianity. Faith without works is dead. We practice too much selfish and not enough *unselfish* patriotism. Patriotism, from "patria," Latin for fatherland, ought to mean zeal and patriotism for the *heavenly Father's* kingdom to be established on earth. Formerly there were family, tribal, and state differences and feuds. We have reached the stage where these have found means of living in peace and harmony, having laid aside each his own emblem and united under *brotherly* love. It is now time that the *nations* unite under the banner seen by Solomon, and which will lead to the "banqueting house" of nations—Song of Songs, 2:4. "He brought me into the banqueting house, and his banner over me was love." Mrs. Louise Lacy.

Richmond,, Mo., Nov. 6.

Mr. A. I. Root:—To the above letter I will add that both of my parents were French, and that I love France where I had a very happy childhood. My good husband was a *German*. I have been in Germany five times, and love Germany dearly. Our children were all born in *Belgium*, except the youngest. He was born in the United States. By such conditions, how can a body feel patriotic, especially if homesick for the "old country"? Of course we all must be true toward our adopted country.

With such a mixture of people from everywhere under the sun, many having come here to escape militarism, I doubt very much whether it is right for us to export any implements of war. May the time soon be here when the women will all have the right to vote, and that they will use it so that the exportation of arms, whisky, and cigarettes from this country will be a thing of the past. How can we pray in truth for God's kingdom to come, and at the same time furnish the world with implements of murder for body and soul? God's kingdom will not come so long as this nation tries to serve God and *mammon*.

Mrs. N. H. Sorge and Family.

Ringwood, Okla., Nov. 23.

Amen to both of the above letters; and may the time speedily come when women like the two above may have a chance to vote, and not only stop the exportation of whisky and cigarettes but also of *all* munitions that are made only to *kill people,* and that can be used for no other purpose. That family of three nationalities is typical of a large part of our United States, and is a most vivid illustration of the fact that *we cannot* engage in war.

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* Some years ago a lot of bees sent by express were "smashed up." I sent in a bill for thirty or forty dollars' damages. An agent of the company came to see us, and in a very friendly way said something like this: "Mr. Root, we will pay this bill if you say so; in fact, I suppose we shall have to pay it; but if we do we shall be obliged to raise our rate on bees. Shall I pay the bill?" I think that in this case there was fault in preparing the shipment. I said, "No;" and the rate on hives of bees was not advanced.

"THE BOLD INTRUDER."

Together with a kind letter from C. C. Crowston, Troutdale, Ore., comes a tract from which I clip as below:

THE EMPIRE BUILDER.

"The Empire Builder," such is the eloquent and descriptive title given to J. J. Hill, the king of railroad magnates. But he is *gone!* His accumulated wealth of $250,000,000 could not buy off the "king of terrors." Nor could his fame and notoriety abash the bold intruder. His death-chamber called together skilled and celebrated physicians, but they could not cope with the antagonist of life, nor wrest their patient from the tyrant's grasp.

As a poor boy he started out in life's fair morning. When he soared high in the sky of financial success he was envied, counted wise, shrewd, and far-seeing by those who estimate a man according to what he amasses. He passed out of time—hoary with age, burdened with the weight of years, and enriched with vast and varied experience; but the place that knew him once shall know him no more forever. If his absence is eternal here, his presence over there is for ever.

Man's existence does not end with time, neither does it end with eternity. Here he appears, then disappears; there he appears, but never disappears.

Reader, how is it with you? Are you so engrossed with the many affairs of time that you are giving no thought to the overwhelming and weighty matters of eternity? If so, you are a thousand times more foolish than the poor Indian that traded off a fortune in nuggets of gold for a few brass buttons. C. C. Crowston.

FRIEND SHUMARD GONE TO REST.

About ten years ago, when on the island opposite Osprey, I had considerable to say about Mr. Shumard, who then owned a large part of the island. We have the sad news that he died Nov. 2, age 74. We quote as follows from the *Sarasota Times*:

"The high regard in which he was held was evidenced by the great number of those who gathered at the Baptist church at Osprey, where the last loving rites were held, and where he was laid at rest 'Till Jesus comes.' He did not die. He just quietly fell asleep."

HIGH - PRESSURE GARDENING

HIGH-PRESSURE GARDENING WITH IRISH POTATOES.

The plan given on p. 145, February issue, promises at this date, Feb. 10, even more than I hoped. If you have no hot-bed, cold-frame, or greenhouse, find a sheltered spot where the sun strikes as many hours of the day as possible, and where north and west winds are kept off. Work the soil up fine and then make it exceedingly rich with stable manure, poultry droppings, or commercial fertilizer. Potatoes will stand heavy fertilizing. Level it off and spread your potatoes out one deep, not quite touching each other, say ½ inch or more between them. Cover with this same rich fine soil. Now let the sun warm it up as much as possible; but before the sun is shut off, cover the whole bed with burlap sacks, old blankets, or something similar, so as to hold in the heat the sun gave it during the day. Be sure your blankets are off when it rains; and if it does not rain, water when needed. You should manage so as to have green leaves and good strong roots by the time the potatoes can be cut and put out in the field. I am *hoeing* my potatoes today that were set out two days ago. We had a warm rain just after setting them out. By this plan you can get good strong plants from even small potatoes; and potatoes that are decayed or partly decayed at one end, will often give the very best plants. The new shoots on some of them, because of our very rich soil on the cold-frame, looked more like asparagus-shoots than like potatoes, and, in fact, some were about as large around as asparagus-shoots. Such potato-plants of an early variety will give new potatoes for market, with favorable weather, in four or five weeks. We are now digging, and selling every day, in half-peck baskets, at 40 cts. a basket ($3.20 per bushel), or about the price of Bermuda potatoes. This short cut for new potatoes should bring the United States a *million dollars,* especially while the price is away up, if those who like such work would *get right at it.* Where are the boys and girls of the potato clubs right in this crisis? This work should all be done while the ground is being made ready to plant.

KIND WORD FROM A 30-YEAR SUBSCRIBER.

I have taken your magazine most of the time for 30 years, and want to take it as long as I live if Uncle Amos and Gleanings outlive me.

Ozark, Mo., Sep. 6. S. S. Lawing

HEALTH NOTES

POISON IVY—IS IT WORSE THAN BEE-STINGS?

Some little time ago the young man who married my oldest granddaughter, Mr. Marshall F. Bryant (I suppose I shall have to call him my grandson-in-law), while at our cottage on the shore of Lake Erie was severely poisoned with poison ivy. Of course there was the usual talk about remedies; but after the trouble had continued several days he concluded it would *not* get well of itself, as I had suggested, like bee-stings. So he went to our druggist, who gave him a prescription that killed the virus at once. Here is the prescription the druggist filled:

POISON-IVY REMEDY.

Zinc sulphate, 15 grains; distilled water, 1 oz. Soak cloth in the solution and apply to the poison blisters. Alternate with alcohol if not relieved. Use with care, as it is a deadly poison.

Since then the two following letters have come to hand in regard to the same matter:

> I notice some reference to poison ivy on page 214; and as I have had some experience with it I am giving the remedy which I have found to be most successful. Simply moisten the affected parts with a 1-1000 to a 1-5000 mercuric chloride solution. As this is very poisonous if taken internally, it should be handled with care. I have not found the stronger solution to be hurtful to the skin. Renew the application several times a day. LEONIDAS R. LITTLETON.
>
> Professor of Chemistry, Emory and Henry College.

> *Dear Mr. Root*:—I dearly love GLEANINGS, and especially your department. I have been taking it for 26 years, and I have not missed a copy. When I see you classing poison ivy as no worse than bee-stings I am tempted to write you my experience and observation, extending over a period of 50 years. I have had my share of stings, and poison ivy too, and I know whereof I speak. If I had to take either, and had my choice, I would say bring on the bees. Some people are affected by ivy a great deal more than others. I don't dare go near it when I am hot and perspiring; yet my son can handle it any time, and he has never been poisoned by it. I knew a lady (one of my mother's sisters) who was near to be delivered of a child. She was poisoned by ivy. She failed to get it cured, and it went all thru her system. When her child was born its body was broken out all over like its mother. The doctor said it was the ivy poison that its mother had. It was not cured, and lived only a short time. Bee-stings will get well without anything being applied; but poison ivy, *never*. O. M. Cutts, page 755, Aug. 15, has discovered that salty meat grease will kill it. Tell him to try the salt without the grease, or salt and water, and it will be just as effective. The best remedy I have *ever* tried an old doctor gave me. Go to the drugstore and get some sugar of lead, put it in just enough water to dissolve it, and apply it to the poison with a rag about three times, and that is the end of the poison. W. MILTON MOORE.
>
> Visalia, Cal., Sept. 1.

With the above evidence I think I shall have to conclude that poison ivy does not get well of itself like bee-stings. Now, even tho I may be wrong, I am going to make another suggestion. From what I am told above, I am inclined to think the poison of redbugs, that so much has been said about, would yield to any or all of the above remedies. If the remedy is applied shortly after the insect has punctured the skin, the strong medicine would kill it. If after the insect has burrowed beneath the skin, and the spot is swollen, give it a good scratching and then apply the medicine. Last winter I used a strong solution of sal-soda with very good results. Sugar of lead has long been known as an antidote for poisonous plants or insects.

The letter from our good friend Moore reminds us not only to be careful about coming in contact with poison ivy, but also the importance of going to a doctor or druggist for a remedy as soon as possible. The whole wide world is just discovering how an unborn child may suffer from alcoholic poison taken by the parents; and the incident before us shows what may follow in like manner from the effects of poison ivy.

HELPS FOR DEAF PEOPLE.

In addition to what I said on p. 1190, Dec. 1, I wish to add that the Globe Audiphone Co., Reading, Mass., have just got out a beautiful little instrument called the "Audi Aid." When I first put it against my ear I uttered a shout because of the loud ticking of the clock and a lot of other sounds I had not heard for years. I said to Sue, "Why, this thing is going to be worth a hundred dollars!" But when carefully tested with the human voice I was compelled *again* to admit I could hear and *understand* no better than with my hand held over my ear, and perhaps not quite as well. At present I cannot understand this, and I hope it may do better with other deaf people.

"GOD'S KINGDOM COMING."

PUTTING ITS FOOT DOWN ON DOPE CURES.

After years of litigation, the United States Supreme Court has at last decided that the traffic in dope medicines and cure-alls is illegal, and must hereafter be excluded from the mails and barred from interstate commerce. Under this ruling, the Shirley amendment to the Pure Food and Drugs Act becomes operative, shutting out the whole fraternity of quacks who for many years have been growing rich at the expense of the credulous and the simple. These conscienceless swindlers and their worthless cures have been so often exposed that the only remarkable thing about the case is that they were not suppressed and stamped out of existence long ago. They have numbered their victims by the million, and the foolish faith reposed in their nostrums by both real and imaginary invalids has cost many lives that might have been saved by proper treatment, to say nothing of the multitudes who have become slaves to drugs and alcohol. The *Christian Herald* has always been in active sympathy with the movement to suppress these fakirs, regarding their traffic as immoral, unscientific, and wholly fraudulent. If they can now be excluded, not only from the mails but from the columns of the country newspapers, their source of revenue will be cut off and they will soon disappear—a riddance upon which the country is to be congratulated.

A hearty amen to the above, taken from the *Christian Herald*, especially if it includes all advertisements that try to make out that booze is ever, under any circumstances, a *medicine*.

POULTRY NEWS

THE EGLANTINE CHICKS.

I have told you about the chicks I raised in Ohio, about the getting of them down here, etc. Well, if this strain of Leghorns are going to lay in 4 or 5 months, I figured that if I could save up enough eggs to start an incubator, say in November, I could then have pullets laying (at least to some extent) before we start back north, say about May 1st. Therefore I saved up 6 dozen eggs, packed them in a valise in bran, and carried them with me on the train, and managed to avoid breaking a single egg. Now let us go back a little. About the time I began saving up these eggs, friend Abbott wrote me a man wanted to buy my small Buckeye incubator. Mr. Abbott has been using it for a year or two and altho he has two or more machines that cost a lot more money, if I am right, the greater part of his thousand or more chickens were hatched in the little Buckeye. His remarkable success with it is why the man wanted to buy it. On p. 1042, Nov. 1st issue, I told you of my visit to Springfield. Well, while there I visited the Buckeye factory. I was not only astonished at the volume of their business but also as well at the wonderfully fine workmanship of their work in wood and metals. I got hold of a lot of points on hatching eggs that were new to me, and I ordered sent to Florida one of their latest small incubators, and a brooder stove to match. Here is one point: Their smallest and cheapest machine will do just as good work, and hold as many eggs, as a much higher-priced one. Some people prefer to pay *more* for style, ornaments, etc., but I don't. Their cheapest machine is handsome enough for me.

Well, when we started for Florida my 6 dozen eggs were some of them about a month old; they were all from pullets only 6 or 7 months old, and they had to stand a shipment of about 1500 miles. Altho the new machine worked beautifully, only 27 of the 72 eggs proved fertile, and of these 27 we got only 18 chicks. Two of the 18 had to be helped out of the shell, and *one* came from an egg that was not even pipped. I made a small opening near his bill (on the Philo plan), let him breathe about 24 hours and then helped him clear out, and now when the flock is over 3 weeks old I can't tell the ones I helped out of the shell from the others.

Well, it wouldn't pay to start the brooder *stove* for only 18 chicks. This is what I did. I found a rock where the men had been blasting, about as big as I could carry. It would just go into the kitchen stove oven. During the cold days in November it cost nothing to get this stone hot. When it would almost burn the paper I tied it upon heavy paper, then outside of that wrapped it with clean empty grain-sacks. A barrel was laid on its side, some sticks put across, and the wrapped-up stone laid on the sticks. It kept hot 48 hours, when we had our coldest weather. One or two nights I put more sacks over the outside of the barrel, and spread oilcloth over all when it rained. Why does anybody want a better brooder for, say, 2 or 3 dozen chickens? They spread out on some soft straw under that hot stone, and when too warm they came out in front. A barrel-hoop covered with poultry-netting kept out prowlers nights. The hot stone was needed only about a week or 10 days; after that, only some blankets over the cross-sticks. Before they ever saw a mother hen they could scratch, fly, and run like a flock of quails. They have now, at a little over 3 weeks old, the run of the garden, and they follow Wesley in his spading under the matted vines of velvet beans, from daylight till dark. Sometimes it is crickets they get, but oftener grubs, cut-worms, and other pests; and not a spadeful is turned over and pulverized without careful inspection from 18 pairs of wonderfully keen little eyes. Who knows how much this has to do with our beautiful thrifty garden just now?

TEMPERANCE

"THE END OF IT IS IN SIGHT."

Even the liquor men now seem ready to admit that prohibition is gaining ground, and is likely to win 90 per cent of the country within a few years. Mr. Bryan now regards it as the greatest social question, and urges his party to take up the issue seriously. The fact is that the liquor traffic has no economic right to exist in this country. It serves no useful nor respectable purpose, and represents a dead loss which society cannot afford to suffer. The breweries and distilleries can be used for making industrial alcohol, and thus give employment to the men who are now worse than uselessly employed in making liquor. Every moral and economic argument is against the liquor traffic. It has no place in a country or in a world in which poverty exists and where men, women, or children lack food and shelter. Farmers are injured by this traffic more than any other class. They realize it, and that is why the great strength of the movement against "booze" comes from the country. The business of selling liquor is no longer respectable, and the end of it is in sight.—*Rural New-Yorker.*

I clip the following from the *Coshocton Tribune*:

LET THE PEOPLE DECIDE.

This nation is fast learning that it can do without the manufacture, sale, and consumption of booze. Last Tuesday's election, besides performing a number of other eye-opening stunts, marked the greatest advance of temperance sentiment of any previous national election in the country's history.

The record of 1916 is almost unbelievable. On January 1, 1916, less than eleven months ago, there were only nine states in the Union under prohibition rule. Today, so swiftly have events moved, there are twenty-three actually dry states, and every reasonable prospect that two more will be dry just as soon as the newly elected dry legislatures get down to work.

Territorially, eighty-five per cent of this country is now dry. Sixty-seven per cent, or two-thirds of its population, lives in dry territory. The truth is that nine-tenths of the dispensing of beverage intoxicants in this country is confined to a dozen or fifteen big cities. Only three states—New York, Pennsylvania, and New Jersey, are still completely under the domination of the liquor interests. Ohio and Illinois are still rated by these interests as of their own, but this is true only of the big cities.

Rural America is already dry; but the big cities like New York and Philadelphia, with truly urban provincialism, simplicity, and ignorance, don't know it. Not only is rural America dry, but there is a tremendous change coming over the big cities themselves. Their own people are fast coming to see that the liquor business, considered sanely and from every angle, is not an asset, but an ominous and a menacing liability.

Reasoning from this and from every phase of the situation, the time is assuredly ripe to submit the question to the people nationally.

A CONFISCATION OF $9000 WORTH OF WHISKY

Some unknown friend sends us a newspaper clipping from an unknown source. It reads as follows:

TACOMA, Sept. 26.—A carload of perfectly good bonded whisky is in storage here following its seizure by deputy prosecuting attorneys and county detectives at Wilkeson, a coal-mining town.

The value of the contraband intoxicant is estimated at $9000, and was consigned by a San Francisco liquor firm to George Morris, a Wilkeson expressman, who, however, denies all knowledge of it.

The whisky was billed as "grapes," and to carry out the deception a layer of grapes about six inches deep was placed on top of each case of liquor.

When word of the seizure spread thru Wilkeson women and children armed with buckets and dishpans flocked to the booze-car, where the officers liberally distributed the luscious fruit free.

In case no claimant appears the authorities will confiscate the liquor and give it to the fishes in the Puyallup River.

What do you think of a business, friends, that has to be conducted in that way? Is it not a fair sample of the entire liquor traffic from beginning to end?

IN PLACE OF "BOOZE," CHILDREN'S SHOES.

Read, and ponder on the above from the *American Issue,* especially that part in regard to *children's* shoes.

Out in Seattle, Wash., is a shoe concern called the Dinham-Strehlau Shoe Company. H. T. Dinham is president. Since the city is dry, this shoe company has for its motto, "Less booze means more shoes." In a recent letter concerning the company's business since the prohibition law went into effect, President Dinham says:

"We have opened three new shoe-stores in Seattle since the dry law went into effect the first of last January. All of them are in locations formerly occupied wholly or in part by five saloons. We are employing more men than the saloon did, and are doing a flourishing business. The increase in the sale of shoes in Seattle has been remarkable since prohibition went into effect in the state. There are 50 per cent more children's shoes sold now than there were when the saloons were in full blast. The people are also buying a better quality of shoes than formerly."

Will the *Liberal Advocate* please copy?

INSANITY; HOW DOES IT COME AND WHAT CAN BE DONE TO PREVENT IT?

The clipping below, sent us by some friend who gives us no clue as to where it comes from, contains a startling truth: The suggestion in the first paragraph, that killing off our best men, leaving the poorest to replenish the earth, is a reasonable explanation of the increase in insanity. With the abolition of the *saloon* there will be, unquestionably, a decrease in *syphilis.*

War is the greatest factor of insanity. The Civil War wiped out 720,000 of the best American stock—healthy, strong, courageous, clean, manly men—young men who were the pick of the country, Northerners and Southerners. This loss was plainly shown in heredity. In 1870 the number of insane persons in the country had increased by nearly one-fourth, and the number of idiotic persons had increased by one-third of the previous proportion in the whole number of people.

Alcoholism is the second greatest factor in insanity, epilepsy, feeble-mindedness, and degeneracy in the race. Alcohol impairs the seed of the race. It costs us millions of dollars to support the defectives produced by alcohol, yet we license and protect the sale of this most potent poison.

Syphilis is the third great factor of mental and physical degeneracy in the offspring. Yet we permit prostitution to exist under semi-official or clandestine regulation. At least four out of every five prostitutes are actually feeble-minded—defectives. Their chief function is the spreading of disease. Victims of these diseases have physically or mentally defective offspring if any—and so the social evil is perpetuated. The social evil would die out in a short time but for the indispensable help of alcohol. Alcohol is the key to the situation. We have the privilege of voting for or against race degeneracy.

We know and can demonstrate that half of all insanity is due to alcoholism and syphilis, either in the individual himself or his ancestors.

IDIOTS AND IMBECILES—THE CAUSE.

The following startling story we clip from the *American Issue.* It is rather long, I know; but the importance of directing the attention of the whole wide world to the facts given is, I am sure, a sufficient reason for giving the whole thing. After you read it over once, read it over again, and ponder on it and pray over it. How long, O Lord, shall we continue to burden the world with helpless and idiotic offspring?

Some years ago at the Vienna Anti-Alcohol Congress, Bezzola, a noted scientist, gave it as his opinion that an occasional intoxication causes injury to the germ cells to which many cases of defective offspring could be attributed.

Later, other eminent scientists in Europe proved by numerous demonstrations that Bezzola was right. In fact, these scientists have removed all doubt. The world of medical science now recognizes this great truth.

Last December at the meeting of the American Society for the Study of Alcohol and other Narcotics, Dr. Matthew Woods, of Philadelphia, told of eight cases in a list of 182 epileptics investigated in which he had been able to trace the history of their existence back to a single alcoholic intoxication in parents otherwise abstainers.

But we do not need to go to Europe, nor even to the eastern half of our own country for evidence It is right here in Ohio. Mr. J. M. Hanson, secretary of the Charity Organization Society of Youngstown, gives the following remarkable instance of the result of his investigation of a family in that city.

"In April, 1908, an Italian residing at 2638 Shannon Street came to us asking that we place his three defective children in an institution. I visited his home and found three hopeless idiots aged 6, 3, and 1½ years respectively. There was no sign of any degree of intelligence in either of them. They all took nourishment in the form of milk from bottles. Not having intelligence enough to use their limbs, they had not developed, and so all were helpless.

"I found in the course of my inquiry that there were four older children who were normal, viz., girls aged 16, 14, and 8, and a boy 10 years old. These children were, with the exception of the oldest, who helped her mother with the care of the idiot children, in the public school, and were doing as well as the average Italian children of that grade.

"The explanation of this apparent mystery of the two sets of children, normal and degenerate, in the same family, was found to be due to alcoholism in the case of the parents. The history of the family as it bears on the matter is as follows:

"Prior to 1900 the man worked for the Carnegie Steel Company in the Ohio works. The normal children were born during this time. In 1900 a local brewer wishing to establish a saloon among the Italians in Brier Hill found this man, who had saved some money, and got him to go into the saloon business. He built this house with the family living-room in the rear of the barroom and the sleeping-rooms on the second floor. The wife helped to tend bar, and both began to drink to excess; and it was during this period when both the man and his wife were drinking to excess that the three idiot children were born. The two older of these idiots have since died; the youngest, now about 9 years old, is living.

"Incidentally, it may be stated that the man lost his property and ended in debt to the brewery, and was obliged to ask charitable aid during the depression of 1908. He later went to work as a day laborer and became self-supporting. After their saloon was closed they both quit drinking to excess, tho they did not recover morally, and the youngest normal daughter is now in the Girls' Industrial Training School at Delaware, an incorrigible."

"FOOLISH TOLEDO!"

We clip the following from the *American Issue*:

Tax-burdened Toledo will spend $100,000 for a workhouse and farm for city prisoners. A majority of these prisoners are such because of booze. Toledo is penny wise and pound foolish. Instead of building prisons and buying farms to care for the saloon product, why does she not close her saloon? They do not pay their way.

"INSANE" LEGISLATION.

The following from Bryan, which we clip from the *Plain-Dealer,* given at the recent wet and dry convention, seems to me "hits the nail on the head" in a most remarkable way:

"The moral effect of this victory will be tremendous," Col. Bryan continued. "It sounds the death-knell of the liquor traffic."

He urged total abstinence as wise for the individual and prohibition as necessary for the nation. On this subject he spoke, in part, as follows:

"One of the ways of testing a man's sanity is to put him in a tank of water, turn on a faucet, and then ask the man to dip the tank dry. If he goes on dipping without turning off the faucet he is regarded as insane. If he turns the faucet off it is a sign that he has not lost his reason.

"The illustration can be applied to legislation against the evils of intemperance. We make laws against drunkenness; we make provision for those who have been brought to poverty, crime, and insanity by the saloon. Are we wise enough to turn off the stream by stopping the sale of intoxicating liquor, or will we content ourselves with the unending work of taking care of those disabled by alcohol without being wise enough to stop the stream of evil that flows out from the saloons?"

SOME OF THE VICTORIES THE YEAR 1917 IS ALREADY GIVING US.

We clip the following from the Jacksonville *Times-Union*:

Washington, Jan. 8.—In the most sweeping of all decisions upholding prohibition laws, the Supreme

Court today upheld as constitutional and valid the Webb-Kenyon law prohibiting shipments of liquor from "wet" to "dry" states. It also sustained West Virginia's recent amendment to her law prohibiting importation in interstate commerce of liquor for personal use.

After having been vetoed by President Taft, who held it unconstitutional, and having been repassed by congress over his veto, the law was sustained by the Supreme Court by a vote of 7 to 2. Leaders of the prohibition movement declare it is to their fight second only in importance to the proposed constitutional amendment.

Lawyers for liquor interests who heard the decision today admitted it upheld and applied the law "in its fullest sense."

Wayne B. Wheeler, counsel for the Anti-saloon League of America, who, with Fred Blue, state prohibition commissioner of West Virginia, argued the case before the court, made this statement on the court's decision:

"The decision is a great victory for law enforcement. The states may now prohibit the possession, receipt, sale, and use of intoxicating liquor, and not be hampered by the agencies of interstate commerce acting as bartenders to bring the liquor into states."

Here is another clipping from the Cleveland *Plain Dealer* that shows progress:

FIGHT ILL, WARN AGAINST LIQUOR.

New York, Jan. 7.—To combat the spread of bronchial diseases which have caused a large increase in the number of deaths the last week, the Health Department began today the distribution thruout the city of thousands of circulars warning against the use of alcohol in any form. The circulars state that alcohol is one of the most powerful allies of the pneumonia germ, and that even moderate drinkers who contract the disease are less likely to recover than are abstainers.

Toward 25 years ago Mrs. Root was close to death with pneumonia. In fact, a council of doctors thought she would not live until morning. The doctor and two trained nurses declared she must have brandy. She, however, protested, and declared it made her worse, and appealed to me. Dear friends, it is usually a serious matter to go contrary to the decision of the doctor and nurses. I prayed over the matter, and decided she should not have *another* drop. Who can tell what would have happened had the brandy been given? She is now 75 and good for years to come, apparently.

HE DIDN'T "SCARE" WORTH A CENT.

We find the following in the *Connecticut Citizen*:

AN ANSWER THAT WAS UNDERSTOOD.

Mr. Sebastian S. Kresge, of Detroit, is the head of a chain of five and ten cent stores well known in this country. Mr. Kresge was one of the enthusiastic dry leaders in the Michigan campaign. Early in the fight he made a subscription of $10,000. He later received a letter from a Milwaukee brewer warning him that the stock of the Kresge stores was on the open market, and liable to be purchased by the enemies of prohibition. His reply was one of the biggest shells thrown into the camp of the enemy during the Michigan battle. It reads as follows:

"Yes, I put $10,000 into the Wayne County dry fight; and, since receiving your letter of inquiry, have added $10,000 more."

No wonder the enemy are getting scared when their boycotting schemes meet rebuffs like the above.

$20,000 WORTH OF BOOZE POURED INTO PLATTE RIVER AT DENVER.

Some good friend sends us a clipping with a picture of Denver police destroying $8000 worth of confiscated liquors. On a previous occasion $12,000 worth was taken from bootleggers, and thus served.

SOME OF THE THINGS THE TOBACCO-USER LOSES.

We clip the following from *Countryside and Suburban Life*:

JOHN BURROUGHS IS "PUT IN TUNE" BY NATURE.

One thing is certain, in a hygienic way I owe much to my excursions to Nature. They have helped to clothe me with health, if not with humility; they have helped sharpen and attune all my senses; they have kept my eyes in such good trim that they have not failed me for one moment during all the seventy-nine years I have had them; they have made my sense of smell so keen that I have much pleasure in the wild, open-air perfumes, especially in the spring—the delicate breath of the blooming elms and maples and willows, the breath of the woods, of the pastures, of the shore. This keen, healthy sense of smell has made me abhor tobacco and flee from close rooms, and put the stench of cities behind me. I fancy that this whole world of wild, natural perfumes is lost to the tobacco-user and to the city-dweller. Senses trained in the open air are in tune with open-air objects; they are quick, delicate, and discriminating. When I go to town my ear suffers as well as my nose. The impact of the city upon my senses is hard and dissonant; the ear is stunned, the nose is outraged, and the eye is confused. When I come back, I go to Nature to be soothed and healed, and to have my senses put in tune once more. That is why for many years I have lived in the country; and even when I have dwelt in the cities the country was always near by, and I used to get a bite of country soil at least once a week to keep my system normal.

The best-loved apostle of the outdoors in America lives at West Park, New York, where his home overlooks the Hudson. He is in his eightieth year.

SOME VERY KIND WORDS FROM AWAY OFF IN WALLA WALLA, WASH.

Dear Sir:—I must tell you I have read your home talks in Gleanings for the past 20 years. I never want to miss one of them. I have been away from my bees now two years and I read my journal just the same and still enjoy all the new things that come up in beekeeping even if I can't work with them.

I always hand Gleanings to some one, where I think they will do good, when I am thru reading, excepting some copies I want to keep always.

Miss Anita A. Byers.

Walla Walla, Wash., Dec. 14, 1916.

KILGORE'S 1917 SEED CATALOG.

Not only those who are *interested* in Florida gardening but those who *are* gardening in Florida, will get much information from the Florida seed catalog. The one above tells *what* to plant, *when* to plant, and *how* to plant and fertilize almost everything you want to grow. So far as I have had experience, I thoroly indorse its teachings.

Address Kilgore Seed Co., Plant City, Fla.

THE ROOT WINTER CASE

Continued from page 182

Some of the members of the convention thought it was cheaper to use the large quadruple winter case shown in Fig. 3, of the Alpaugh-Holtermann type, recommended by Dr. E. F. Phillips, of the Bureau of Entomology; but Mr. Root objects to this on account of the time it takes to pack the bees.

Mr. E. G. Carr, the director of the apicultural experiment station, as will be seen in Fig. 4, is trying out all methods of wintering. First, the Root case as already described; the Alpaugh-Holtermann winter case for four hives and double-walled hives as shown in the foreground, placed in pairs. We await with much interest the result of the different plans. The only criticism of this yard is the lack of windbreaks.

Fig. 3 shows a number of prominent beekeepers of New Jersey, including Mr. Walter S. Thorndyke, of the A. I. Root Company's office in New York, at the extreme right. The morning was quite chilly, and overcoats were very comfortable. On opening up some of the colonies the clusters were found to be in ideal condition, and large enough to winter well.

* * *

FROM 200 MILES NORTH OF WINNIPEG

We are a long way north, but we raise bees, make good honey and a lot of it. We got bees in combless packages from Alabama last year and they arrived in fair condition. CHAS. McCORMICK.

Kenville, Manitoba.

* * *

Continued from page 177

thing. I am very well pleased with my experiment; and it has led me to believe that the business of shipping bees in combless packages from the South to beekeepers in the North is a success, and profitable both to the southern and northern beekeepers.

Lowville, N. Y. F. L. BARBER.

* * *

Continued from page 180

dition. I won't have a leaky cover or old rotten hive. It doesn't pay. I am certain that the business principles that govern the large mercantile establishments and manufacturing plants hold true in a business no greater than my beekeeping and honey-producing business. If not, why not?

IRA D. BARTLETT.

East Jordan, Mich.

A New Arrival in Jersey Royalty

A twenty-five thousand dollar son is the latest offering that the Jersey cow Sophie 19th of Hood Farm, the world's champion long-distance butter cow of all breeds has made to the dairy world. Sophie, for whom her owner, Mr. C. I. Hood of Lowell, Mass., refused an offer of $50,000, is truly the dam of the golden calf, for her son now weighs about ninety pounds which in gold would be worth $25,920, and Mr. Hood refused to consider a $25,000 offer for the calf. Sophie has a record of over two and three-quarter tons of butter in six years, which is the greatest ever made by a cow of any breed.

About Jersey Cattle

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Write to Mr. A. L. Rice, Manufacturer, 11 North Street, Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

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FROM THE FIELD OF EXPERIENCE

Continued from page 184

"By what method do you ascertain the fertility of a queen?"

As soon as a young queen has been successfully mated her abdomen will commence to enlarge, continuing thus from two to three days, when eggs will be found in the cells. In late fall, after all queens cease to lay, the enlarged abdomen is all the criterion we can judge from.

"What is the best method of selecting queens and drones?"

To the average mind the all-important point in the breeding of bees is *nectar-gathering.* For this reason the breeding queen should be selected from stock which for years has proven the best for surplus honey; and the drone mother should be from as good gatherers, but, where practical, from stock not closely related to the queen mother. However, as we have very little control of this drone matter, especially where there are wild bees or other colonies as near as three to five miles, we cannot be at all sure that our carefully reared queens will mate with our carefully reared drones. The desired qualities to add to nectar-gathering, as I consider it, are longevity and vitality, good winterers, quiet and peaceable disposition, and, for comb or section honey, white capping of the completed product. These things may not all be suited for Brazil or other localities. Therefore it will devolve on the reader to find out what is best suited for the locality he may be in.

Borodino, N. Y. G. M. DOOLITTLE.

Continued from page 185

her first season, because he cannot know that she is the best queen-mother the yard affords.

Our plan is to buy or select our tentative queen-breeders, and have all introduced to colonies about the last of July. The following June these colonies are supered and dequeened on the same day. Any not fit for dequeening around June 25 to 30 are disqualified. Each of the queens is moved with one frame of issuing brood and about one pint of bees to a new stand. The issuing-brood frame is placed between two empty combs, and the rest of the hive filled out with foundation. Every effort is made to have the nuclei equal at this time.

In the old hive the approximate amount of brood is credited to each queen. Later on, all honey and wax the nuclei produce is ascertained. Nine days after dequeening all cells are removed so as to render all old colonies queenless, and the longevity of the bees observed until about Oct. 1. The condition of the combs should be noted, and a queen caged in the cluster, to be released in 7 days. Those accepting queens should be noted, for this quality is important as time goes on, but one or more colonies will be worth further notice.

The prospective breeding queens soon have their nuclei up to good strength, which will again give an opportunity for the best ones to make a good showing. The weight of each is also a guide for honey-gathering qualities, and the amount of syrup each needs to carry thru winter should be noted.

The next June further observations on the old colony and on the one the selected queen heads at that time will leave no doubt which queen should be queen-mother for that year.

Cayuga, Ont. W. A. LISHMAN.

* * *

Continued from page 188

vaunt it as a food, *because* people do not buy it for either, but as a delicious adjunct to the bill of fare. My reasons are, that honey is not rated by medical men as a medicine, and is used only as a vehicle for medicines, if at all. It is not a food in the sense that it is a tissue-builder, but is an *energy producer*, a fuel to produce heat, the coal for the furnace, and in this respect identical with sugar, while its advantage over sugar is that it is predigested—that is, inverted by the bees before it is sealed, and further in the chemistry of the hive after it is sealed. A man can live on bread alone for a long time, on flesh meat alone, but would starve on any of the sugars, while they would live longer on some of the other carbohydrates, as tallow or whale blubber.

I have the best possible authority for the little red sticker. It is merely a paraphrase of the verse which reads: "Eat thou honey," but I wanted to make it brief, so I gave only that, deleting the best reason ever given for the use of honey, viz., "*because it is good.*" The "plain" talk, as our Quaker friends call it, is out of style, and I did not at all change the sense of the advertisement when I wrote "*Eat Honey.*"

"Eat (thou) honey, because it is good," is the best advertisement ever written.

Buck Grove, Iowa. DR. A. F. BONNEY.

YOUR TREES NEED "SCALECIDE"

Because it kills *every kind of scale* and destroys the *aphis eggs* before they hatch

Because it wipes out the *Pearl Psylla, Bud Moth* and *Case-Bearer*. Also stops the growth of *Canker* and *Collar Rot*

Because it is *invigorating* to *tree growth* insuring *better fruit* and *bigger crops*

Because it *saves money, time* and *trouble*. You cannot afford to do without it

Sold on a "money-back" proposition

Write for Circular No. 13.

B. G. PRATT CO.
Dept. 6
50 Church Street New York

The "BEST" LIGHT

Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE.

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

Hill's Evergreens Grow

Best for windbreaks and hedges. Protect crops and stock. Keep house and barn warmer—save fuel—save feed. Hill's evergreens are hardy, nursery-grown. Get Hill's free illustrated evergreen book and list of 50 Great Bargain Offers—from $4.50 up per Thousand. 56 years' experience. World's largest growers. Write

D. HILL NURSERY CO., Evergreen
Box 2462. **Dundee, Ills.** Specialists.

WHITE SWEET CLOVER $3.90 Per Bu.

BIGGEST MONEY-MAKER KNOWN—INVESTIGATE

The greatest forage plant that grows. Superior to all as a fertilizer. Equal to Alfalfa for hay. Excels for pasture. Builds up worn-out soil quickly and produces immense crops, worth from $50 to $125 per acre. Easy to start, grows everywhere, on all soils. Write today for our Big 100-page free catalog and circular about unhulled and scarified hulled sweet clover. We can save you money on best tested, guaranteed seed. Sample Free.

A. A. BERRY SEED CO., BOX 966, CLARINDA, IOWA

BUY SWEET CLOVER

Cattle pastured on it will fatten quickly and at small cost. Sown in the orchard between trees, it loosens the soil and promotes rapid growth of trees. Ploughed under it will increase crops wonderfully. Coming into rapid favor and use where once tried.

Best for Poor Land, Sandy or Clay Soils

Sow a few acres this season. Your land needs it. Great for worn-out farms. Rich in humus and nitrogen producing qualities. Inoculates land for alfalfa perfectly. Buy it of us. Get our free catalog of Garden and Field Seeds. Address

FREE BOOK
LINCOLN BRAND SEEDS

Griswold Seed and Nursery Co.
Dept. C-107 **Lincoln, Neb.**

Spray Your Crops

KANT-KLOG SPRAYER

9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. *Send for catalog.* Agents wanted.

Rochester Spray Pump Co.
207 Broadway Rochester, N. Y.

IRON AGE
Farm, Garden and Orchard Tools
Answer the farmer's big questions: How can I grow crops with less expense and labor? How can I grow fancy fruit at low cost? The
IRON AGE Barrel Sprayer
No. 190
(horizontal) solves the spraying problem for the busy farmer. Can be used in any wagon, cart or sled. Reliable easy-working pump placed *outside* the barrel—prevents rusting—all parts easy to reach. 100 to 125 pounds pressure with two nozzles. 50 and 100 gallon sizes. We make a full line of sprayers. Write today for our free booklet.
Barrel Sprayer
Bateman M'f'g Co., Box 20E, Grenloch, N.J.

3 Garden Tools in 1
The BARKER Weeder, Mulcher and Cultivator
The only garden tool that successfully, in one operation, *kills weeds*, and forms a complete *soil mulch* to hold moisture. "Best Weed Killer Ever Used." A boy with a Barker beats ten men with hoes. Has shovels for deeper cultivation. Self adjusting. Costs little. *Write for illustrated folder and special Factory-to-User offer.*
SEE THE KNIVES
Barker Mfg. Co.
Box 10, David City, Nebr.

"Best" Hand Lantern
A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. **Agents wanted. Big Profits. Write for Catalog.** THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

ORNAMENTAL FENCE
Attractive, Strong, Durable, all steel, for Lawns, Churches or Cemeteries. Costs less than wood. **DIRECT TO YOU at Manufacturers Prices.** Catalogue Free. Write today.
KITSELMAN BROTHERS, Box 403 MUNCIE, INDIANA.

64 BREEDS Valuable New Poultry Book Free—108 pages.
Fine pure-bred chickens, ducks, geese and turkeys. Choice, hardy, Northern raised. Fowls, eggs and incubators at low prices. America's greatest poultry farm. **24th** year in business. Write today for Free Book.
R. F. NEUBERT CO., Box 837, Mankato, Minn.

62 BREEDS, Pure-bred Chickens, Ducks, Geese, Turkeys. Hardy, northern raised, vigorous, beautiful. Fowls, eggs, incubators, at low prices. America's Pioneer Poultry Farm; 23 years' experience. Large fine Annual Poultry Book and Catalog FREE.
F. A. NEUBERT, Box 693 Mankato, Minn.

450,000 TREES
200 varieties. Also Grapes, Small Fruits, etc. Best rooted stock. Genuine, cheap. 2 sample currants mailed for 10c. Catalog free. LEWIS ROESCH, Box H, Fredonia, N. Y.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Continued from page 214

in sacks. A few mornings ago one of my boys complained to me that he could hardly feed the cows on account of the bees on the cotton-seed-meal sacks. I know that they are using some of this artificial pollen, but quite a bit of natural pollen is being brought in from the neighboring swamps also.

I have placed feeders under a few of my colonies in the home yard, to hasten the rearing of drones; and as soon as I find any sealed drone brood I intend to begin rearing queens for spring increase.

We always have cold and disagreeable weather in February; and while the bees are well supplied with winter stores at present the likelihood is that the great amount of brood that is now being reared is going to cause a serious shortage of stores about the latter part of February; and I may have to feed some of my colonies in order to keep them from starving before fruit bloom in March.

While we get some tupelo honey in this immediate section, it is mixed with honey from other sources, and has to be sold as off grade. My most profitable honey source is from gallberry, the flow of which comes off in May. My gallberry crop last season was a failure on account of excessive drouth; but I have never known two successive failures from this source, and am expecting a fine crop this year. I have always secured a splendid crop of cotton honey during June and July; but boll-weevils struck this section last season, and it is likely that very little cotton will be planted here another year. However, I am not at all discouraged over the outlook, and am preparing to increase to 500 colonies this spring. N. L. Stapleton.

Colquitt, Ga., Jan. 12.

* * *

A Good Record for Ten Days During May

Last season we had a short but very heavy honey-flow in May. My record colony was in a two-story hive in the spring. It had two full-depth supers added at the beginning of the honey-flow, the supers containing full sheets of foundation. The bees were three-banded Italians. The daily gain as registered on a pair of accurate counter scales was as follows:

May 5, 5¾ lbs.
May 6, 13 lbs.
May 7, 16½ lbs.
May 8, 25½ lbs.
May 9, 17 lbs.
May 10, 17½ lbs
May 11, 18½ lbs.
May 12, 10 lbs.
May 13, 10½ lbs.
May 14, 10 lbs.

The total gain for the 10 days was 143 pounds, or a little over 14 pounds a day. As shown, during the three heaviest days the gain totaled 60 pounds. L. Parker.

Benson, N. C.

TALKING QUEENS

Laws Queens Speak for Themselves

Please remember Laws' queens have stood the test of continuous advertising in this journal for this the 28th season. Thousands of customers have testified to the merits of Laws' bees and queens, and if there is a displeased customer I do not know it.

I will begin mailing queens as usual in March. Single tested queen, $1.25. Select Tested, $2.00. Untested will be ready in April; after which see the following table.

	April to June			June to November		
	1	12	100	1	12	100
Untested	$1.00	$ 9.00	$ 75.00	$ .75	$ 8.00	$ 65 00
Tested	1.25	10.00	85.00	1.00	10.00	75.00
Select Tested	2.00	18.00	120.00	1.50	15 00	100 00

Breeding queens: Guaranteed none better, at all times: each $5 00

Combless Bees AFTER May 1st.

1 lb. package, $1.50; 5 to 10 packages each, $1.25; 10 to 50 packages, $1.15
2 lb. package, 2.50; 5 to 10 packages each, 2.25; 10 to 50 packages, 2.15
3 lb. package, 3.50; 5 to 10 packages each, 3.25; 10 to 50 packages, 3.15

Price of queens to be added to above packages.

Wheen 10 or more packages are bought, empty carriers to be returned at my expense.

My queens are all reared in full colonies, plenty of young bees and abundance of fresh honey in the hives. No other plan is so conducive to full-developed and long-lived queens.

My facilities are such that I can mail from 5000 to 6000 queens each season. Circular on application.

Five per cent discount on all orders with the cash for either bees or queens booked this month

Purity of stock and safe delivery guaranteed to your express or post office on all bees and queens from my yards.

Address **W. H. Laws, Beeville, Bee County, Texas**

Three-band Italian Queens

I am now booking orders for early spring delivery of queens at ¼ cash and the balance when the queens are shipped. Send in your orders now and get your queens when you want them.

Prices April 1st to July 1st.

	1	6	12
Untested	$ .75	$4.25	$8.00
Selected untested	.90	5.00	9.00
Tested	1.25	7.00	13.00
Selected tested..	2.00	11.00	20.00

After years of careful selecting and breeding, I now have my stock bred up to a very high standard. THEY ARE BRED FROM IMPORTED STOCK, the very best in the world for honey gathering and gentleness. They are not given to swarming.

GUARANTEE that every queen will reach you in first-class shape, to be purely mated, and to give perfect satisfaction. All queens that do not give satisfaction I will replace free of charge or return your money.

L. L. Forehand, Fort Deposit, Ala.

BEES

For Sale

April the 15th is the date on which we can ship you the best three-banded bees and queens on the market; we have been in the bee business continually for twenty-four years and have been striving to secure the best three-banded bees which money could buy and skill produce, all these years. Judging from the many letters which we have received from satisfied customers, we have succeeded in our efforts. We believe we can furnish you with the best honey-gatherers to be found anywhere. You will find our nuclei better filled with bees and brood than any other nuclei you can buy. All our bees are on standard, wired, Hoffman frames; full sheets of foundation. File your orders now, sending money when you want the bees shipped. Satisfaction and safe arrival guaranteed.

We quote without queen, as follows:—

Three-frame nuclei	$2.25
Two-frame nuclei	1.75
One-frame nuclei	1.25
Three pounds bees	$3.25
Two pounds bees	2.25
One pound bees	1.50

If queen is wanted with bees add price of queen wanted.

Young, untested queens.........	$ .75
Young, tested queens...........	1.00

The Hyde Bee Co., Floresville, Tex.

BEE LINE BEES

. . for . .

Quality - - - Service

Our Italian bees are hustlers, gentle to handle, cap their honey white, are very resistant to European foul brood and are a very handsome bee to see. In fact they are second-to-none bees.

Satisfaction and safe arrival are guaranteed. Orders booked now and bees shipped when wanted.

Bees by pound ready for shipment April 1, prices without queens:

1-lb. package $1.50; 6, $ 8.50; 12, $16.00; 25, $33.00; 50, $ 65.00; 100, $125
2-lb. package 2.50; 6, 15.00; 12, 29.50; 25, 58.50; 50, 116.00; 100, 225

With each shipment of bees we send printed instructions as to how to handle them to build them into full colonies.

QUEENS.—We are wintering over a fine lot of late fall-reared queens. Should you want a tested queen early we have them. All of our queens are sent out under an iron-clad GUARANTEE to satisfy or they will be replaced or your money refunded. Prices for queens till May 10th.

Untested, 1 for.... $1.00; six for $ 5.50; twelve for $10.00; 100 for $75.00
Tested, 1 for...... 1.25; six for 6.50; twelve for 12.00
Select Tested, 1 for. 2.00; six for 10.00; twelve for 18.00

We will allow 5 per cent discount on all orders received with cash till the first of April. With each shipment of bees and queens we send a copy of state entomologist health certificate. Any queens that should prove mismated will be replaced when returned to us.

B. M. Caraway, Bee Line Apiaries, Mathis, Texas

NO BETTER BEES THAN THESE

From April 15 to July 1 we shall have 30 pounds of combless bees a day. These bees are bred from Dr. C. C. Miller's best—and there are no better. The demand from the North for such bees is likely to be large this spring. Beekeepers are going to be on the jump this year because of the bright prospects ahead. So book your order early with us and you will know just when the bees will be shipped—and remember we will not book more than we can supply. Here are our prices.

Safe Arrival and Satisfaction Guaranteed

½-lb. package $1.50.
One to five 1-lb. packages, $2.00; 6 to 9, $1.70; 10 to 100, $1.60.
One to five 2-lb. packages, $3.00; 6 to 9, $2.70; 10 to 100, $2.60.
One to ten 1-fr. nuclei, $2.00 each; 10 or more, $1.85.
One to ten 2-fr. nuclei, $3.00 each; 10 or more, $2.60.
One to ten 3-fr. nuclei, $4.00 each; 10 or more, $3.60.
Full colony, 8 frame, $6.50; 10-frame, $7.50.

All prices include an untested queen. Ten per cent of the amount of order should be sent when asking us to book your order.

QUEENS from Dr. Miller's best breeders, $1.00; $11.00 per dozen. Tested, $2.00; select tested, $3.50; tested breeders, $5.00 to $10.00. Shipments from Starkville, Miss.

Stover Apiaries, Starkville, Mississippi

Forehand's QUEENS

Which Colony is Yours, Mr. Beekeeper?

How many of you were disappointed last season when you harvested your honey crop? You can make every colony a good one. WHY NOT? Just head it with a young vigorous three-band Italian queen. She will cost you only 75c, just 3 lbs. of honey. YOU can easily make a gain of 16 lbs. over the inferior colony, which is a net gain of $3.75. Good pay for introducing one queen, not considering the increased value of the colony.

Spring will soon be here, the time to requeen that colony with the bad queen. CAN you spend your time more profitably now than deciding what stock, and where to purchase your early queens? Give us a trial. We breed only the pure three-band queens. All of our yards are the purest that can be bred. So you take no risk in getting a hybrid from us.

Four reasons why you should use our queens: 1st—They are first-class honey-gatherers. 2d—They are the most vigorous, and highly resistant to foul brood. 3d—The Imported bees (which ours were reared from) are the gentlest bees known. 4th—The most modern and learned beemen in the world today (the Roots) use the three-bands. WHY? Because they are best.

We have had 25 years of experience in rearing queens, having started with Doolittle, and such men. We have 1000 nuclei, which makes it possible for us to fill orders promptly. Three expert queen-breeders have charge of nuclei. So we do not overwork, which gives us ample time to improve our stock. None but first-class queens are mailed. We give a first-quality queen at a medium price, and guarantee perfect satisfaction and safe delivery.

Untested	One,	$ .75	Six,	$ 4.25	Twelve,	$ 8.00
Selected untested	One,	1.00	Six,	4.75	Twelve,	9.00
Tested	One,	1.50	Six,	8.75	Twelve,	17.00
Selected tested	One,	2.00	Six,	11.00	Twelve,	20.00

Write for circular giving general description. Mail all orders to

W. J. FOREHAND & SONS, Fort Deposit, Alabama

For Sale --- 10,000 lbs. of Bees in Packages --- Spring Delivery

20 YEARS OF SELECT BREEDING GIVES US BEES OF THE HIGHEST QUALITY
BEES FOR HONEY PRODUCTION..............BEES OF UNUSUAL VITALITY

M. C. Berry & Co., Hayneville, Ala.

Gentlemen:—Will want more of your three-pound packages of bees with queens in spring. The two I bought of you last May did all right; one package made 185 sections of honey and gave one swarm and the other made 296 sections and gave two swarms. I am well pleased.

Kimmell, Ind., Jan. 15, 1917. Melvin Wyseng.

Very Resistant to European Foul Brood and Safe Arrival Guaranteed.

Swarms of Bees Without Queens April First Delivery

1-lb. packages, $1.25 each;	25 to 50, $1.22½ each;	50 to 100 and up, $1.20 each
2-lb. packages, 2.25 each;	25 to 50, 2.22½ each;	50 to 100 and up, 2.20 each
3-lb. packages, 3.25 each;	25 to 50, 3.22½ each;	50 to 100 and up, 3.20 each

Golden and 3-Band Italian Queens April First Delivery

Untested	75 cts. each,	$65.00 per 100	Tested	$1.25 each,	$110 per 100
Select Untested	90 cts. each,	75.00 per 100	Select Tested	1.50 each,	125 per 100

Queens' wings clipped free of charge.
Write for descriptive price list. Let us book your order now.
Only a small deposit down required.

LARGEST AND MOST SUCCESSFUL SHIPPERS OF BEES IN PACKAGES

M. C. BERRY & COMPANY, Hayneville, Alabama, U. S. A.

If You Need a QUEEN

for a Queenless Colony

you want it as soon as you can get it and you want a good one. We can furnish tested queens by return mail for $1.00 each. We breed the three-band Italians only and we breed for the best. Satisfaction guaranteed on all queens. No disease in our apiaries.

J. W. K. Shaw & Co., Loreauville, La.

BEEKEEPERS' SUPPLIES

Send for new 1917 price list now ready. We are also in the market at all times for extracted and comb honey in any quantity. Give us a chance to bid on your supplies. We can save you money.

The M. C. Silsbee Co., Haskinville, N. Y.
P. O., Cohocton, N. Y., Rt. 3.

BEES and QUEENS for 1917

Golden and Leather Colored. Canadian and U. S. Trade

We are now booking deliveries in May, June, July, 1917, at following prices:

	QUEENS FROM PENN, MISS.				QUEENS FROM TORONTO, ONTARIO			
Prices one and over	1	6	12	25 to 100	1	6	12	25 to 100
Untested	$ .85	$4.50	$ 8.00	$ .65 each	$1.00	$4.80	$ 9.25	$ .75 each
Warranted ..	1.10	5.50	9.50	.75 each	1.35	5.80	10.75	.85 each
Tested	1.50	7.50	13.50	1.05 each	1.75	7.80	14.75	1.15 each
Breeders	$3.00 to $10.00 each				$3.00 to $10.00 each			

POUND PACKAGES WITH UNTESTED QUEENS FROM

	PENN, MISS.			TORONTO, ONTARIO, CANADA		
Prices of one or more	1 to 5 each	6 to 25 each	50 over each	1 to 5 each	6 to 25 each	50 over each
1 pound and queen	$2.25	$2.00	$1.90	$3.00	$2.75	$2.65
2 pound and queen	3.00	2.75	2.65	4.50	4.25	4.00

Prices on full colonies and nuclei quoted on request.

We supply the ROOT CANADIAN HOUSE, 54 Wolseley St., TORONTO, ONTARIO, CANADA, with large shipments almost daily during the above months, frequently moving almost a car of packages to them at a time. This is the most successful way of serving Canadian trade. This firm has our entire agency for the Dominion, and all Canadian business should be addressed to them; unless you wish shipments made direct from Penn, Miss., address us.

At time of booking order remit 10 per cent as a form of good faith on your part with remainder to be remitted a few days prior to date of shipment.

We move orders promptly. Our references, any mercantile agency, The A. I. Root Co., or American Bee Journal.

When you deal with us it means satisfaction. Health certificates furnished with each and every shipment of bees. This assures you that no delays will take place. Safe delivery guaranteed.

If interested in beehive material our catalogs will be sent on request.

The Penn Company, Penn, Mississippi, U. S. A.

MURRY---HE PAYS THE EXPRESS

If you live within the outer limits of the 6th postal zone (your postmaster will tell you about that), order your pound packages of me. If you return the cages in one parcel and in good condition I will refund the express charges you have paid. This applies only to 12 or more packages to points in the U. S. Special rates to points in Canada. Make your arrangements 30 days in advance to insure prompt shipments.

Pound packages of bees	12	25	50	100
1-lb. pkg.	$16.00	$33.00	$ 65.00	$127.00
2-lb. pkg.	29.50	58.50	116.00	230.00

Safe arrival guaranteed within five days of Mathis, Tex.

If queens are wanted add price of queens wanted to above prices.

I have yet failed to find anything better than the strain of Three-banded Italians I have been breeding. They have made good in all parts of America and many foreign countries. Resistant to Isle of Wight disease in England, and European foul brood and paralysis in America. The best honey-gatherers I can find; gentle to handle, requiring but little smoke to control, and cap their honey white.

There are Goldens and Goldens, but I have at last secured the real GOLDEN ITALIANS. Prettiest bees I ever saw, and good honey-gatherers. Some colonies of my present strain stored as much as 250 pounds of surplus honey the past season. Gentle to handle.

Three-banded Italians and Goldens are bred in separate yards, so far distant as to make cross mating improbable. Every queen guaranteed. I will cheerfully replace any of my queens that prove to be mismated if returned to me.

Prices	March 15th to May 1st			May 1st to Nov. 15th			
Queens	1	6	12	1	6	12	100
Untested	$1.00	$ 5.50	$10.00	$ .75	$4.00	$ 7.50	$60.00
Tested	1.25	6.50	12.00	1.00	5.50	10.00	
Select tested	2.00	10.00	18.00	1.50	8.00	15.00	
Breeders	5.00 to 10.00 each, any time.						

Orders filled by return mail is the rule at this shop.

Decidedly the best way for the beginner to start with bees is with nuclei, consisting of 1, 2, or 3 combs of bees, brood, and honey. With ordinary care they build up and store a crop of honey the same year, if secured in the spring. Ship anywhere. Never lost one in transit in my life.

1-frame nucleus without queen, $1.50; 2-frame nucleus without queen, $2.50
3-frame nucleus without queen, $3.50 f. o. b. Mathis, Tex.

Add price of queen wanted to above prices. Any number wanted at these prices. No disease. Health certificate with every shipment of bees or queens. Satisfaction guaranteed.

H. D. MURRY, MATHIS, TEXAS

"Griggs Saves You Freight"

TOLEDO

is the place to order your 1917 supplies from, and GRIGGS is waiting for your order.

We are well supplied with a fine stock of Root's Goods for the following season; and if a saving of time and money means anything to you, Mr. Beeman, wherever you are, don't overlook getting our catalog and prices.

Promptness and satisfaction is our motto, whether you have one hive or 500.

HONEY and Beeswax always wanted. Special price list on bees and queens, also Poultry Feeds, mailed with Catalogs.

S. J. GRIGGS & CO.
Dept. 25 Toledo, Ohio
"Griggs Saves You Freight"

When Ordering Supplies
remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk.
Prompt service and no trucking bills.
THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager

BEE-HIVES

We keep in stock several styles of hives. Our 8 and 10 fr. chaff hives are packed with fine cork and are not heavy enough to be cumbersome. We also have 8 and 10 fr. single-walled hives.

BEES

We furnish a full colony of Italian bees with a tested Italian queen in a new 8-fr. chaff hive, with complete super for $13.50. In a single-walled hive, $11.00. Also nucleus colonies and bees by the pound.

Our 26th annual catalog giving prices on everything a beekeeper uses, mailed upon request.

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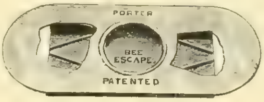

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THREE-BANDED ITALIANS. We are breeding from the best selected from ELEVEN YARDS. Ten per cent discount on all orders received 30 days before shipment is to be made. We believe that there is a BRIGHT FUTURE before the Northern beekeeper in making up his winter loss and strengthening up his weak colonies by getting bees from the South in 1 and 2 lb. packages; and you can always have your queens sent safely this way. Every beekeeper knows what it means to have strong colonies at the commencement of the honey-flow. Every northern beekeeper ought to try from 2 to 5 packages this year. It will not cost you much, and may mean much to you in the FUTURE. We guarantee safe arrival on all bees in 6 days of here. Reference, The Guaranty State Bank, Robstown, Texas.

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Untested . . .	$1.00	$ 5.50	$10.00	$38.00
Tested	1.25	6.50	12.00	45.00
Select Tested.	2.00	10.00	18.00	65.00

Pound packages of Bees.

	1	6	12	25	50
1 lb.	$1.50	$ 8.50	$16.00	$33.00	$ 65.00
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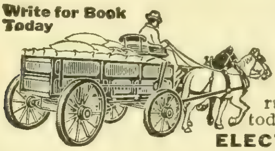

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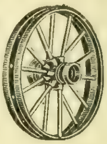

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Untested,	$1.00;	6, $5.00;	12, $ 9.00
Tested,	1.25;	6, 6.50;	12, 12.50

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by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested, each, $1; 6, $5. Tested, each, $1.25; 6, $5.50. Breeders, $5.

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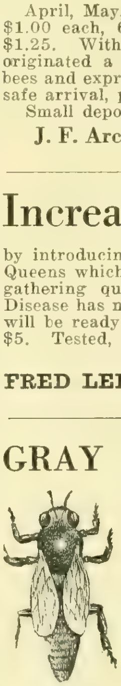

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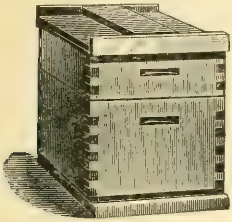

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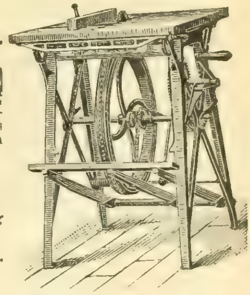

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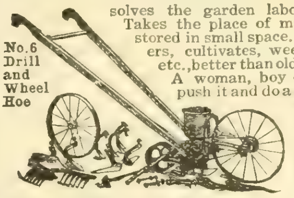

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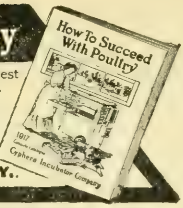

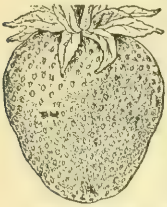

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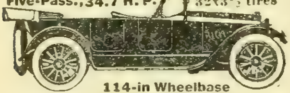

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I am better able to supply the trade with my three-band Italian queens, colonies and nuclei than ever before. Send for circular and prices.

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Beginner's Book of 28 Pages, Free

Also our 44-page Bee-supply Catalog for 1917 is ready for mailing. Ask for your copy now.

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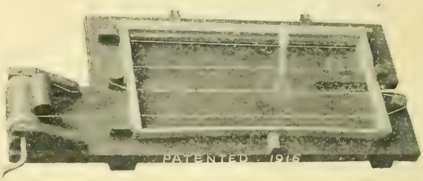

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The Secret of Success in beekeeping is to keep your colonies strong. To do this you must have good healthy laying queens.

Untested	$ .75;	6, $4.25;	12, $ 8.00
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Tested	1.50;	6, 8.00;	12, 15.00
Select tested	2.00		

Safe delivery guaranteed. We solicit your order.

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Also for Three-banded Italian Queens

We spare neither labor nor money to produce the very best that can be had. We pay special attention to honey-gathering qualities, but do not forget gentleness, beauty, etc. Having several hundred colonies in outyards to select our breeders from, we are sure we offer you something good. We begin about April 12th to send out swarms, also untested queens.

1 to 49—1 lb. bees in packages $1.50 each
50 to 500—1 lb. bees in packages 1.37½ each
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50 to 500—2 lbs. bees in packages 2.37½ each

The above is without queens. Add price of queens wanted. F. O. B. Fitzpatrick, Ala.

Untested queen	April and May, 1, $ .75;	100, $75.00.	June, 1, $ .75;	12, $ 8.00;	100, $ 60
Tested	April and May, 1, 1.25;	100, 125.00.	June, 1, 1.20;	12, 14.00;	100, 115
Select tested	April and May, 1, 2.00;	100, 200.00.	June, 1, 1.90;	12, 22.00;	100, 180

Very best queens for breeding $3.00. If any of our untested queens prove to be mismated we are willing to replace her free of charge. No foul brood has ever been in our vicinity. I guarantee safe arrival and satisfaction on all we send out.

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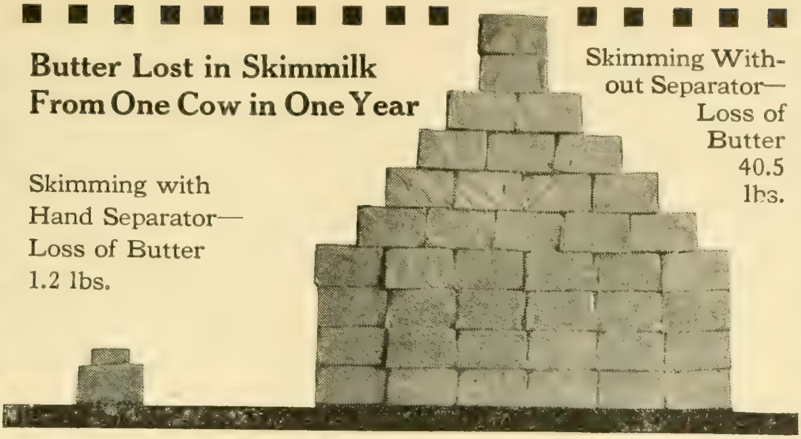

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These figures from the Purdue Experiment Station Bulletin No. 116 show the difference in loss of butter when you use a cream separator and gravity skimming. You will notice that the Hand Separator is nearly 40 times as efficient—in fact *no profit* in dairying can be made without one. Buy a

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CREAM SEPARATOR

Because it gets all the cream at widely varying speeds. It doesn't lose cream when turned below speed. It's the only separator that doesn't.

Because it delivers cream of even thickness, no matter how the speed is varied. It's the only separator that does.

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Because the simple tubular bowl has no discs to wash or to mix up. There is only one piece in the bowl, so that washing up is easy and quick.

You can easily pour milk from a 40-quart can into the low Sharples supply tank.

The Sharples is ruggedly built for hard service. It turns very easily, due to the ball bearing running in oil. And, remember, *it gets all the cream all the time.*

Send for our catalog *"Velvet" for Dairymen* which fully describes the New Sharples Suction-feed Separator and the extra profits it will earn for you.

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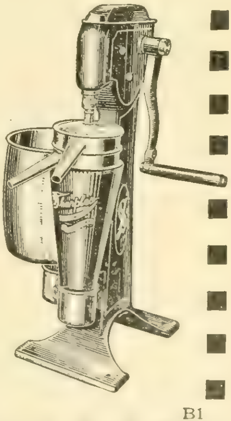

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Amber honey in new 60-lb. cans at 10 cts. Van Wyngarden Bros., Hebron, Indiana.

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HONEY FOR SALE in 60-lb. cans, 2 cans in each case. Amber, 7½ cts. per lb. Buckwheat, 7 cts. Sample, 10 cts., F. O. B. here. Robert Conn, Roaring Branch, Pa.

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WANTED.—Clover and amber extracted honey. Highest price. Deroy Taylor Co., Newark, N. Y.

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We carry a complete line of bee-supplies. Ask for our bee-supply catalog. Let us quote you on your requirements. Deroy Taylor Co., Newark, N.Y.

THE ROOT CANADIAN HOUSE.—54-56 Wolseley St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

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Caponizing set with book of instructions, cost $3.50; never used. Exchange for bees or supplies.
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OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

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PROFITABLE LITTLE FARMS IN VALLEY OF VIRGINIA, 5 and 10 acre tracts, $250 and up. Good fruit and farming country. Send for literature now. F. H. LaBaume, Agr. Agt. N. & W. Ry., 246 Arcade Bldg. Roanoke, Va.

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A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free. C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

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Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

FOR SALE.—50 colonies of bees.
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Well-bred bees and queens. Hives and supplies.
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Full colonies fine Italian bees at bargain prices. Write J. York Trigg, 811 Elm St., Dallas, Tex.

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Nutmeg Italian queens and Root's beekeepers' supplies, Root's prices.
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My choice northern-bred Italian queens are hardy, and will please you. Orders booked now for spring delivery. Free circular. F. L. Barber, Lowville, N. Y.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen.
C. F. Alexander, Campbell, Cal.

"She-suits-me," bright Italian queens, $1 after May 15. Orders booked now.
Allen Latham, Norwichtown, Conn.

Leffingwell's three-band Italians for the season of 1917. Send for circular and prices.
E. A. Leffingwell, Allen, Mich.

Vigorous, prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing.
A. V. Small, 2302 Agency Road, St. Joseph, Mo.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1; 6 for $5. Wm. S. Barnett, Barnetts, Va.

FOR SALE.—25 colonies of Italian bees, frames wired, combs built on full sheets of foundation; 8-fr. colonies, $6; 10-fr., $7 with queen.
Henry Shaffer, 2860 Harrison Ave., Cincinnati, O.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each.
Henry S. Bohon, Rt. 3, box 212, Roanoke, Va.

FOR SALE.—Ten colonies Italian bees in Buckeye double-walled hives, all in first-class condition. New queens introduced last fall; $10.00 per colony.
Keewaydin Farms, Gates Mill, Ohio.

Golden and 3-band Italians; also Carniolan queens; tested, $1.00 each; untested, 75c; for larger lots and bees in packages and nuclei write for prices.
C. B. Bankston, Box 65, Buffalo, Texas.

My 3-banded Italian queens will be ready to ship April 1. Write for prices of bees and queens by the pound. Safe arrival and satisfaction guaranteed.
J. A. Jones, Greenville, Ala.

FOR SALE.—Thirty swarms of Italian bees. On account of poor health I will sell them cheap. They are in eight and ten frame hives, Hoffman frames.
Mrs. Mary True, 143 Elm St., Fostoria, O.

FOR SALE.—Italian queens and bees in combless packages; safe delivery and satisfaction guaranteed in all respects. Write for prices.
Oscar Mayeux, Hamburg, La.

FOR SALE.—25 colonies of bees. Some of them are Moore's strain of Italians in 20-frame alternating hives; $6.00 per hive.
Wm. F. Dependahl, Jr., Delhi, Ill.

QUEENS ON APPROVAL.—A select tested queen sent on approval. Send address for description, etc. Bees and supplies for sale.
A. M. Applegate, Reynoldsville, Pa.

I am now booking orders for 3-frame nuclei for spring delivery, young tested queens, 3 bands, lots of bees; satisfaction; $4.00 each. Also colonies and supplies. S. G. Crocker, Jr., Roland Park, Md.

FOR SALE.—1000 lbs. bees in 2-lb. packages at $1.00 per lb. Untested Italian queens, 70 cts. extra, to be shipped in April. All orders must be in by April 1. T. W. Burleson, Waxahachie, Texas.

BUSINESS-FIRST QUEENS. — Three-banded Italians—untested, $1.00 each; 6 for $5.00. Send for price list and $10 free offer. No disease.
M. F. Perry, Bradentown, Fla.

Select golden and three-banded Italian queens, bred for honey-gatherers; gentle and prolific; 70 cts. each; 6, $3.75; 12, $7.25. Booking orders now.
G. H. Merrill, Pickens, S. C.

FOR SALE.—1000 lbs. bees in packages, $2.00 per lb., with untested queen; without queen, $1.25 per lb., warranted queens, $1.00 each; 6 for $5.00; doz., $9.00. Safe arrival and satisfaction guaranteed. J. F. Archdekin, Bordlonville, La.

Swarms in packages, also Italian queens, can be had—the kind that will increase your smiles and your bank account from W. D. Achord, of Fitzpatrick, Ala. See his large ad't elsewhere in this magazine. Circular to you for the asking.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, $1.00: 6, $5.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Sons, Wilcox St., Binghamton, N. Y.

FOR SALE.—Italian bees and queens. One-pound, two-pound, and three-pound packages, with queens; also on frames and full colonies. Ask for our price list, free beginner's book, and bee-supply catalog.
Deroy Taylor Co., Newark, N. Y.

My bright Italian queens will be ready to ship April 1 at 75 cts. each; virgin queens, 30 cts. each. Send for price list of queens, bees by the pound; safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

Two-frame nuclei, 3-band Italian bees, $2.25; 1 lb. bees with queen, $1.65. Hoffman brood-frames, wired, and foundation, at catalog prices less carriage, if ordered for parcel post. J. B. Marshall & Son, Rosedale Apiaries, Big Bend, La.

My bright Italian queens will be ready to ship April 1, at 60 cts. each: virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, $1.00; 6, $5.00; tested, $2.00; breeders, $5.00 to $10.00.
J. B. Brockwell, Barnetts, Va.

Golden Italian queens, bred strictly for business, that produce a strong race of honey-gatherers; untested queens 75 cts. each; $8.00 per dozen: $60.00 per 100; tested, $1.50 each. Prompt service and satisfaction guaranteed.
L. J. Dunn, 59 Broadway Ave., San Jose, Cal.

QUEENS.—Improved three-banded Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, $8.00; select, $1.00; dozen, $10.00; tested queens, $1.25 each; dozen, $12.00. Safe arrival and satisfaction guaranteed.
H. C. Clemons, Rt. 3, Williamstown, Ky.

FOR SALE.—Black or German bees, just as good as thorobreds for building up or strengthening colonies in early spring. 1, 2, 3, or 4 fr. nuclei; 1 and 2 lb. pkgs. Write for prices.
Mrs. T. H. Carruth, Big Bend, La.

GOLDENS THAT ARE TRUE TO NAME.—Write for testimonials. One race only. Unt., each, 75c; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60.00. Tested, $1.50; select tested, $2.00. Breeders, $5.00 and $10.00.
Garden City Apiaries, San Jose, Cal.

FOR SALE.—Three-banded Italian bees and queens. 1 untested queen, $1.00; tested, $1.50; 3-frame nucleus with untested queen, $4.00. My queens are reared from the best breeders and by the best known methods. No diseases. Satisfaction guaranteed. Ask for prices on larger quantities.
J. L. Leath, Corinth, Miss.

FOR SALE.—25 colonies Italian bees in 10-fr. hives, wired frames; combs built on full sheets of foundation; no disease; $4.50 per colony; purchaser to move them. J. B. Ratcliffe, Amboy, Minn.

FOR SALE.—29 stands Italian bees — strong healthy colonies; eight and ten frame dovetailed hives; also extra hives, supers, feeders, and a complete list of implements. These go at a bargain.
J. F. Drebert, Boomer, W. Va.

Golden Italian queens about May 1, that produce golden bees; good honey-gatherers. No foul brood. Select tested, $1.25; tested, $1.00; untested, 75 cts.; 6, $4.25; 12, $8.00. No nuclei or bees for sale.
D. T. Gaster, Rt. 2, Randleman, N. C.

FOR SALE.—Mott's northern-bred Italian queens are hardy, prolific, gentle, and hustlers, therefore resist disease well. Bees by pound. Plans, "How to Introduce Queens and Increase," 25 cts. List free. E. E. Mott, Glenwood, Mich.

Head your colonies with some of our vigorous young three-band Italian queens. Untested, June 1, $1.00; $9.00 per doz.; nuclei and full colonies. Satisfaction guaranteed.
A. E. Crandall & Son, Berlin, Conn.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

TOO MANY BEES.—Must sell by April 1, 3-band Italians; one colony, $5.00; 6 for $24.00; 1-frame nucleus, $2.00; 6, $10.50; 2-frame nucleus, $2.50; 6, $13.50; one untested queen, 75 cts.; 6, $4.00; one tested queen, $1.00; 6, $5.00. These prices are good only to April 1. Book your order now. Satisfaction guaranteed.
W. J. Littlefield, Box 582, Little Rock, Ark.

QUEENS, Doolittle and Moore strain, also Goldens that are Golden. 1 select unt., $1.00; 6, $4.25; 12, $8.00; tested, $1.25. Best breeder, $5.00.
Bees by the pound a specialty. One 1-lb. package $1.25; one 2-lb., $2.25; large lots less; also nuclei and colonies. Ready March 15. Booking orders now. Circular free.
J. E. Wing, 155 Schiele Ave., San Jose, Cal.

Three-banded queens only, ready after May 1. Dr. C. C. Miller queens, $1.00 each; 12 for $10.00; breeders, $10.00 each; my own strain, $1.00 each; 12 for $9.00; breeders, $5.00 to $10.00 each; nuclei and full colonies ready June 1; 2-fr., $2.50; 8-fr., with queen, $8.00; 10-fr., with queen, $10.00. Add price of queen you want with nuclei.
Curd Walker, Queen-breeder, Jellico, Tenn.

Good Italian queens. Tested, $1.00; untested, 75 cts. Bees in 1-lb. packages, with untested queen, $2.25; 2-lb. package, $3.25; 1-lb. package, with tested queen, $2.50; 2-lb. package, with tested queen, $3.50. Nuclei, 2 frames, with untested queen, $3.25; 3 frames, $4.00. Nuclei with tested queen, 2 frames, $3.50; 3 frames, $4.25. We can please you.
G. W. Moon, 1904 Park Ave., Little Rock, Ark.

FOR SALE.—200 stands high-grade bees—averaged 80 lbs. comb honey last season and 75 lbs. the year before. Are all located in town, and only one block from main street. I am getting too many in town, and may eventually have to remove them, therefore will sell 200 stands. Also for sale 10,000 lbs. white-clover comb honey.
G. F. Schilling, State Center, Ia.

BEES FOR SALE.—I have bought, after personal inspection, 100 colonies of Italian bees on eight-frame self-spacing Lang. combs built on full sheets of foundation. These are from Chas. E. Stuart, for eighteen years inspector for New York state. These bees have been selected and bred for European foul-brood resisting, and for honey-gathering qualities. I offer a few colonies for sale. Delivery f. o. b. my station, in either New York state or Canada. Ad. will not appear again.
R. F. Holtermann, Brantford, Ontario, Canada.

Golden Italian queens of the quality you need. Bred strictly to produce Golden bees that are real workers. Delivery after March 25. Untested, 1, 75 cts.; dozen, $8.25; 50, $32.50; 100, $60.00. Bees by the pound, nucleus, or full colony. Money back if not satisfied.
L. J. Pfeiffer, Motor Route A, Los Gatos, Cal.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money returned by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

M. C. Berry & Co., Hayneville, Ala.—Book my order for 6 2-lb. packages of your bees with queens. One of the two-pound packages bought of you last year made 200 pounds of honey, and several made 125 to 150 pounds each. I find your bees not only hustlers but also gentle. Fred H. May.
Meredosia, Ill., Jan. 22, 1917.

M. C. Berry & Co,, Hayneville, Ala.—Book my order for 10 1-lb. packages of your bees with queens. The ten packages bought of you last spring, altho delayed in transit, and therefore taking five days to reach me, arrived in fine condition—not a cupful of dead bees in lot. They did well, more than paying for themselves the first season, and also went into winter quarters in fine condition. I have tried queens from several different places, and like yours best of all. C. O. Board.
Alabama, N. Y., Jan. 22, 1917.

MISCELLANEOUS

BASSWOOD TREES.—All sizes; send for list.
W. M. Hansen, Jr., Niles, Mich.

FOR SALE.—1910 Indian motorcycle, just repaired. M. Ballard, North Branch, N. Y.

Quality Dahlias (northern grown). Send for catalog. Mrs. E. L. G. Davis, Rt. 2, Newton, N. H.

HONEY SIGNS.—Made to order. Send for price and description. S. Goodlander, Wabash, Ind.

Send 20 cts. in stamps and receive a collection of 15 Atlantic City and seashore colored post cards.
31802 Box 224, May's Landing, N. J.

How to double your honey production at a small cost. Send 2-cent stamp for information.
W. M. Budlong, 1526 14th Ave., Rockford, Ill.

FOR SALE to the highest bidder, 26 volumes GLEANINGS, 1883 to 1909 inclusive; nearly all complete. Mont Wyrick, Cascade, Iowa.

Your old portrait renewed or any photo copied to cabinet size, 6 for $1.25. B. A. Ruple, Com. Photographer, 3611 Archwood Ave., Cleveland, O.

PURE MAPLE SYRUP.—If you were disappointed about getting your maple syrup last year, why not order earlier this year? We shall probably be making syrup before this adv't reaches its readers.
C. C. Parkhurst, Rt. 1, Phalanx Sta., Ohio.

HELP WANTED

Man wanted to work on a small farm and with bees. S. Stewart, Newcastle, Colo.

WANTED.—Experienced beeman for season of 1917. Roscoe F. Wixson, Rt. 20, Dundee, N. Y.

WANTED.—Two men to work with bees the coming season; must have some experience.
B. B. Coggshall, Groton, N. Y.

WANTED.—Single man in family, competent to run 6 beeyards of 200 colonies each, on shares or on salary. Don't answer this ad't except for business only. Frank Reimann, Cauto, Cuba.

WANTED.—Man to work with bees, season 1917. State age, experience, and wages.
The Rocky Mountain Bee Co., Billings, Montana.

WANTED.—Young or middle-aged man of experience to do farm and garden work. Must be temperate, and a man of good character.
S. L. Cork, Peru, Ills.

HELP WANTED.—Two good active men with experience to help in bee and queen yards. Board furnished. State wages wanted.
Stover Apiaries, Starkville, Miss.

WANTED.—Reliable man of good habits to work my home apiary and small farm. State age and wages first letter.
Mrs. H. C. Ahlers, Rt. 1, Box 11, West Bend, Wis.

WANTED.—Farm-raised man of good habits, who has had some experience with bees, as helper with bees, etc., season 1917. Give age, experience, and wages wanted, first letter.
Frank Kittinger, Franksville, Wis.

WANTED.—An experienced lady beekeeper with $300 to $500 to take charge of 50 stands of bees for three years, on shares; also care for two girls, ages 6 and 7; liberal pay.
C. E. Crowfoot, Box 76, Crook, Colorado.

WANTED.—Queen-breeder to take up proposition to supply our members with queens. Location and equipment furnished. About 3000 queens used in 1916. Idaho-Oregon Honey-producers' Association, New Plymouth, Idaho.

WANTED.—Experienced queen-breeder and all-around beeman—one who is a hustler and knows the business. Young unmarried man preferred. We furnish board and lodging. Write us your age, experience, etc., with lowest wages first letter.
The Penn Co., Penn, Miss.

WANTED.—Industrious young man, fast worker, and of clean mental and body habits, as a student helper in our large bee business for 1917 season. Will give results of long experience, and board and small wages. Give age, weight, experience, and wages in first letter.
W. A. Latshaw Co., Clarion, Mich.

WANTED.—Young man with a little experience, fast willing worker, as student helper with our 1000 colonies. Crop for past two years, 6 carloads. Will give results of our long experience and small wages; every chance to learn. Give age, height, weight, experience, and wages, *all* in first letter, or expect no answer. E. F. Atwater, Meridian, Idaho.

EXPERIENCED MANAGING BEEMAN wanted to handle bees on shares in Ozark Mountains, Ark. We furnish bees, also house, garden spot, farm-home privileges, and work on farm when not engaged with bees. Can also raise unlimited quantity of chickens if he desires. Owner away for health.
C. W. Riggs, 502 Jackson St., Tampa, Fla.

Two young men can, during the season of 1917, reap the benefit of my experience for nearly forty years with up to 800 colonies of bees; also as public demonstrator with bees and lecturer and expert in beekeeping at the Ontario Agricultural College. One with clean body and mind required. Board; and, if the season is good, a little more given.
R. F. Holtermann, Brantford, Ontario, Canada.

CONVENTION NOTICES

A NEW ASSOCIATION.

The beekeepers of southern Indiana and Illinois will be interested to know that plans are on foot for the perfecting of a new organization to be known as the Wabash Valley Beekeepers' Association. For the purpose of electing officers and mapping out a program of work a meeting is called, March 10, at Mt. Carmel, Illinois, the headquarters to be at the Merchants' Hotel. A hall will be secured later on.

Any further information can be secured from C. H. Wiley, 502 East Locust St., Harrisburg, Ills.

TRADE NOTES

We have six copies of "Fifty Years Among the Bees," by Dr. C. C. Miller, 1915 edition, which have the covers slightly soiled. Otherwise the volumes are in perfect condition, and in some cases the covers are soiled only on the corners. To clear these volumes we offer them at 75 cts. each, prepaid.

COGGSHALL BEE-BRUSH.

Broom-corn has become so scarce and high that we are unable to buy Coggshall bee-brushes except by paying about two and a half times the normal price. We are obliged, therefore, to advance these brushes to 30 cts. retail, with a corresponding increase in wholesale and jobbing prices.

SECOND-HAND HONEY-EXTRACTORS.

We recently accepted two two-frame Cowan honey-extractors in part payment for a larger-size power machine, and we offer these machines at special price as follows:

A No. 15 Cowan for two L. frames, from Chicago, Ill., at $11.00; A No. 15 Cowan two-frame machine from Grandview, Wash., at $13.00. Both machines are in good condition, and are of late style with slip-gear device.

ORDER YOUR SUPPLIES EARLY.

On account of the special stress of war conditions, freights are now greatly delayed. If there was ever a year when beekeepers should order early to get supplies it is this one. It may take anywhere from a month to six weeks to deliver freight that ordinarily would not require more than three or four days. Unless beekeepers are forehanded they will be ordering by express and paying big bills. Order early and be ready for the harvest.

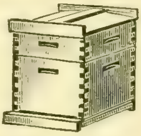
BEESWAX WANTED.

In line with the advance in comb foundation we are prepared to offer higher prices for beeswax. Until further notice we will pay 34 cents cash, 36 in trade, for average wax delivered at Medina; 1 ct. a pound less at our branch offices. This is a higher price than we have ever published in GLEANINGS during the more than forty years it has been published. Thirty years ago this month we were offering 20 cts. cash, 23 trade. If you have a good lot of wax on hand, let us hear from you. Remember we exchange comb foundation for beeswax at very favorable exchange rates, which we will mail to those interested on application.

COMB FOUNDATION ADVANCED.

Because of an unusual and excessive demand for beeswax for export to Russia, the market price has sharply advanced in recent weeks to a point far above anything in our experience this early in the season. Altho our catalogs have hardly all been mailed, we are under the necessity of announcing an advance of 5 cents a pound in the price of comb foundation of all grades, retail, wholesale, and jobbing, effective Feb. 20.

We started in the year with a larger stock of beeswax than usual; but our output of foundation for December, January, and February will reach over seventy thousand pounds, and some additional was sold on contract last fall, not yet delivered, so that, in self-defense, we are under the necessity of making this advance in the price of foundation this early in the season. We give no assurance that there will not be another advance before the season closes. Prices are more liable to go higher than to recede, for several months. The A. I. Root Company.



and Supplies at Factory Prices

Satisfaction guaranteed or your money refunded. We are glad to have "Kretchmer's" popular make of bee supplies, and we still have some of the "Lewis" make, which we are closing out at a reduced price. Liberal discount to new customers. Drop us a card for our 1917 catalog.

W. H. Freeman . . . Peebles, Ohio

CANDY

Bees sometimes starve with plenty of honey in the hive. Why not avoid this risk by placing a plate or two of candy on the frames when you pack for winter? It is a good life insurance. Send for circular also catalog of supplies.

H. H. Jepson, 182 Friend St., Boston, Mass.

PENNSYLVANIA BEEKEEPERS

Our catalogs now out. Postal will bring you one. Root's goods at Root's prices. Prompt shipment.

E. M. Dunkel, Osceola Mills, Pa.

From roses to raspberries

every need of the suburban garden is helpfully covered by the sturdy plants, roots, vines and trees shown in

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Get your copy at once.

Arthur J. Collins & Son, Moorestown, N. J.
Box 42

Finest ITALIAN QUEENS

We have on hand a limited number of select tested queens that were reared during the light honey flow last September and were wintered in large nuclei. We are offering these queens for $2.50 each, safe arrival and satisfaction guaranteed. Will be shipped any time desired, as soon as weather will permit. If supply is exhausted when order is received, money will be promptly refunded. . . . Send for booklet and price list of queens and bees by the pound.

Jay Smith, 1159 DeWolf St., Vincennes, Ind.

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QUALITY

has been the greatest aim in the manufacture of Root Bee Supplies. Have we made good? Have we reached our mark? Here is the test. . . Take a

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or any other specialty turned out in our factory, and after it has been

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FIVE YEARS
TEN YEARS

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plus
ROOT SERVICE

give greatest satisfaction in long run.

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Medina, Ohio

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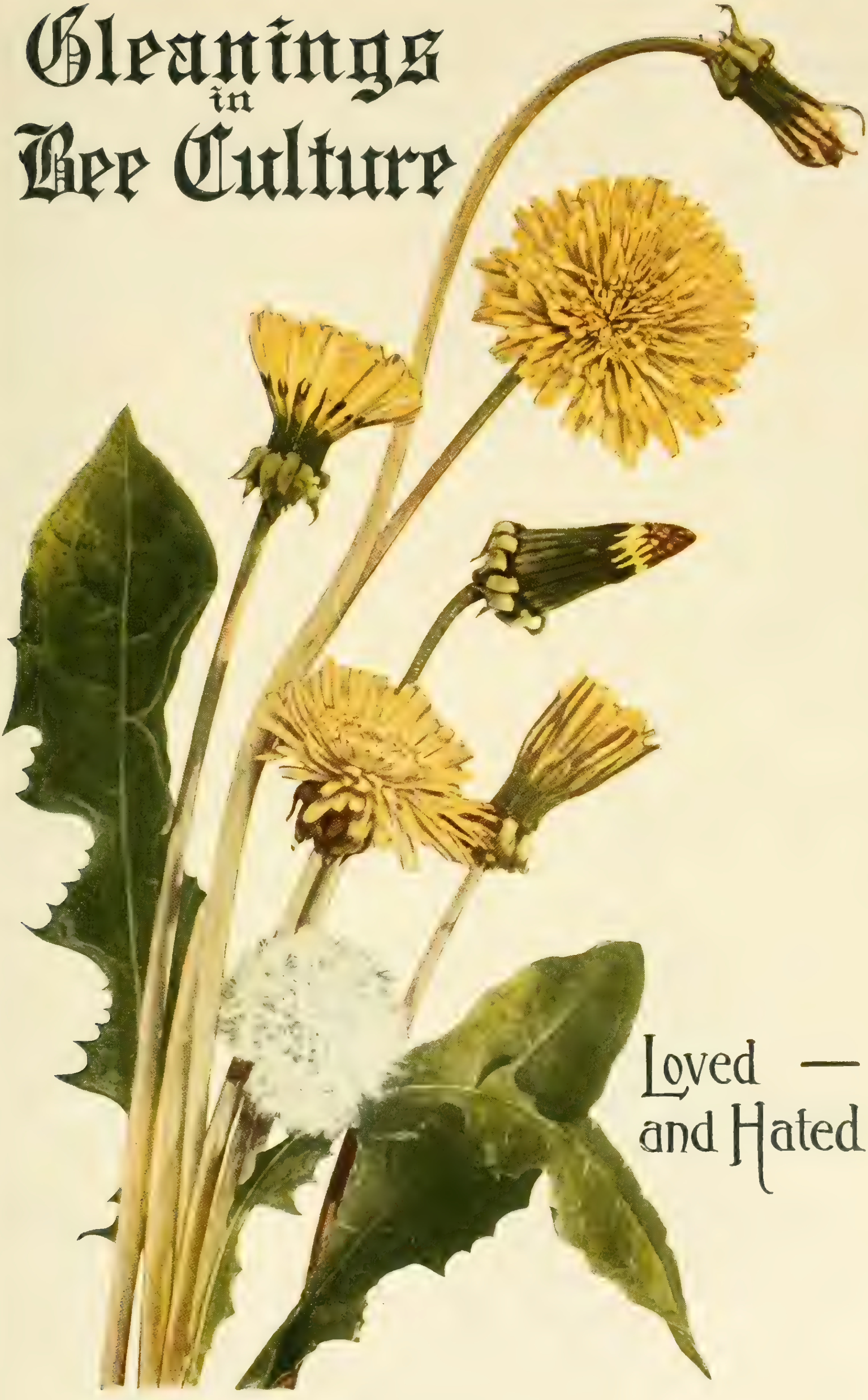
Gleanings in Bee Culture


Loved —
and Hated

Vol. XLV April, 1917 No. 4

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you SPOT CASH for any thing you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

EARLY SHIPMENTS of QUEENS and BEES by the Pound

Write us for our prices and descriptive circular of our bees and queens. And if you will state size and how many packages you will need, and give your express office we will tell you what the bees will cost delivered.

R. V. Stearns, ... Brady, Texas

Southern Headquarters for Bees in Packages

Also for Three-banded Italian Queens

We spare neither labor nor money to produce the very best that can be had. We pay special attention to honey gathering qualities, but do not forget gentleness, beauty, etc. Having several hundred colonies in outyards to select our breders from, we are sure we offer you something good. We begin about April 12th to send out swarms, also untested queens.

1 to 49 –1 lb. bees in packages $1.50 each
50 to 500 –1 lb. bees in packages 1.37½ each
1 to 49—2 lbs. bees in packages $2.50 each
50 to 500—2 lbs. bees in packages 2.37½ each

The above is without queens. Add price of queens wanted. F. O. B. Fitzpatrick, Ala.

Untested queen . . . . April and May, 1, $ .75; 100, $75.00. June, 1, $ .75; 12, $ 8.00; 100, $ 60
Tested . . . . April and May, 1, 1.25; 100, 125.00. June, 1, 1.20; 12, 14.00; 100, 115
Select tested . . . . . April and May, 1, 2.00; 100, 200.00. June, 1, 1.90; 12, 22.00; 100, 180

Very best quens for breeding $3.00. If any of our untested queens prove to be mismated we are willing to replace her free of charge. No foul brood has ever been in our vicinity. I guarantee safe arrival and satisfaction on all we send out.

W. D. ACHORD, Fitzpatrick, Alabama, U. S. A.

CONTENTS

APRIL, 1917

Editorials 249
Loved and Hated .... E. R. Root 252
Comb Honey—Few Swarms .... Mrs. S. Wilbur Frey 253
Spring Management of Bees .... Dr. C. C. Miller 255
Making the Work Count .... H. H. Root 257
Conversations with Doolittle .... G. M. Doolittle 261
Letters from a Beekeeper's Wife .... "Mary" 262
San Joaquin Valley Again .... P. H. Bales 263
That Change from Comb to Extracted .... A. W. Smith 265
Safe Methods of Shipping Comb Honey .... Geo. Dodds 265
Store Box Winter Cases .... Dr. A. P. Betts 267
Great Strides in Tennessee .... Grace Allen 267
Ira D. Bartlett Capping Melter .... R. F. Holtermann 268
Machine for Dampening Sections .... Arthur Rattray 270
Coercion vs. Education .... A. C. Ames 270
Stray Straws .... Dr. C. C. Miller 272
Siftings .... J. E. Crane 273
Our Food Page .... Stancy Puerden 274
Our Neighbors' Fields .... E. G. Baldwin 275
Around the Office .... M. A. O. 276
Gleaned by Asking .... E. R. Root 277
Mother Bee Nursery Rhymes .... M. G. P. 279
Can This be Done? .... The Editors 280
Just News .... The Editors 282
Beginners' Lessons .... H. H. Root 285
Gleanings from North, South, East, and West .... Dept. Editors 287
Heads of Grain from Different Fields 293
Our Homes .... A. I. Root 297
Health Notes .... A. I. Root 301

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(Entered as second class mail matter at the Postoffice at Medina, Ohio.)

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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Wax Rendering Department

We do perfect wax rendering. It will pay every beekeeper to gather up all his old comb and cappings and ship to us. We charge 5c a pound for the wax we render, and pay the highest cash or trade prices.

The Fred W. Muth Co.

The firm the Busy Bees work for

204 Walnut Street . . . . Cincinnati, Ohio

HONEY MARKETS

BASIS OF PRICE QUOTATIONS.

The prices listed below, unless otherwise stated, are those at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

CHICAGO.—Honey has sold quite well during the past thirty days, and the demand for extracted has exceeded the supply. Comb honey has also cleaned up to quite a degree, altho there has been no advance in price. Extracted would probably bring more than our late quotations, which have been 10 cts, per lb. for the white, and 8 to 9 for the ambers. Comb honey has been ranging at 14 to 15 for the white, with no amber grades offered. Reports are coming of some loss in bees owing to the severe cold weather; but generally they are of a favorable nature, with promising prospects of a flow of nectar thruout the country. Beeswax is bringing 33 to 35 if free from sediment.

Chicago, Ill., March 18. R. A. Burnett & Co.

NEW YORK.—There is very little demand for comb honey. There is some call for No. 1 and fancy white stock, whereas off grades are neglected. Stocks, however, are not very heavy, and should be cleaned up very shortly. We quote nominal No. 1 and fancy white from 14 to 15 cts. per pound; lower grades at from 10 to 13, according to quality. As to extracted honey, domestic product, such as California and white clover, seem to be well cleaned up; but mixed grades, including buckwheat, are still being offered and still available. Prices vary according to quality and quantity, all the way from 6½ to 10 cts. West India honey is in good demand, and receipts are principally from Cuba, which is selling at from 85 to 95 cts. per gallon, according to quality. Beeswax is steady and in good demand, selling at from 38 to 40, according to quality.

New York, March 19. Hildreth & Segelken.

PORTLAND.—Comb-honey market is very unsettled. Jobbers are closing out stocks at any price, owing to lack of demand. Extracted is in fair demand for best grades, but market is pretty well cleaned up. Bees wintered very well, and prospects for coming season are good. We quote fancy comb honey, per case, $3.10; No. 1, $3.00; No. 2, $2.50. White extracted honey brings 8; light amber, in cans, 7; amber, in cans, 6. Clean, average yellow beeswax brings 25.

Portland, Ore., March 12. Pacific Honey Co.

DENVER.—With the exception of a small lot of extra fancy white comb honey we are entirely cleaned up. Our supply of extracted is sufficient only for our local requirements. Demand for extracted in carlots continues strong. There is also a fair demand for comb honey in carlots which is unusual this late in the season. We are quoting the following jobbing prices: Extra fancy comb honey, per case, $3.15; fancy, No. 1, and No. 2, out of stock. White extracted honey brings 9 to 9½; light amber, in cans, 8½ to 9. We pay for clean average yellow beeswax, 33 cts. cash, 35 in trade, delivered here.

Colorado Honey-Producers Ass'n.

Denver, Colo., March 15.

SAN FRANCISCO.—Extracted honey is about cleaned up—a few straggling lots, generally off-grade stock, arriving. There is a large demand for better grades, but none to offer. Comb honey is gradually cleaning up. We quote extra fancy comb honey, per case, $3.00 to $3.10; fancy, $2.75 to $3.00; No. 1, $2.25 to $2.50; white extracted honey, none; light amber, in cans, 8 to 9; amber, in cans, 6 to 8. Clean average yellow beeswax brings 30 to 33.

Leutzinger & Lane.

San Francisco, Cal., March 13.

LOS ANGELES.—These prices are what the retailer pays our wholesale customers, not what we are buying at. Last season's stock of extracted honey is exhausted. New honey is not being extracted yet. We quote extra fancy comb honey, per case, $4.25; fancy, $3.85; No. 1, $3.25; No. 2, $2.50. Clean average yellow beeswax brings 35.

Geo. L. Emerson.

Los Angeles, Cal., March 18.

KANSAS CITY.—The market on comb honey does not pick up very fast in this section. Demand for extracted still remains good. Comb-honey stocks are light, but the demand is light. We quote extra fancy comb honey, per case, $2.85; fancy, $2.85; No. 1, $2.75; No. 2, $2.50. White extracted honey brings 12; light amber, in cans, 10; amber, in cans, 8. Clean average yellow beeswax brings 35.

C. C. Clemons Produce Co.

Kansas City, Mo., March 17.

PHOENIX.—Greatest demand for extracted honey in car lots known here for twenty years; also highest price offered. Last car shipped sold at $8.00 per case. Bees are wintering well; best prospects for many years for the coming season. Honey is all sold. Clean average yellow beeswax brings 30 cts. cash.

Wm. Lossing.

Phoenix, Ariz., March 18.

ST. LOUIS.—Extracted honey of all descriptions is in good demand, and supplies very light. There is some improvement in demand for comb honey, but stocks here are quite ample. Extra fancy comb honey per case, brings $3.25; fancy, $3.15; No. 1, $3.00; No. 2, $2.50. Light-amber extracted honey in cans brings 10 cts.; amber, in cans, 8½; in barrels, 8. Clean average yellow beeswax brings 36c.

R. Hartmann Produce Co.

St. Louis, Mo., March 17.

SYRACUSE.—There is no material change in the market here. The retailers have not moved their stocks as fast recently as they were doing some time ago. Generally speaking, retailers as a rule are well supplied. We quote extra fancy comb honey, per case, $3.84; fancy, $3.60; No. 1, $3.36; white extracted honey brings 10; light amber, in cans, 10.

Syracuse, N. Y., March 20. E. B. Ross.

BUFFALO.—Demand is very light. Supply seems to be sufficient; quality of stock good; yet there seems to be very small demand for comb honey. Demand seems to be more on strained honey, of which there are no offerings on this market. On comb honey we quote No. 1 white clover 14 to 15, and buckwheat 11 to 11½. Gleason & Lansing.

Buffalo, N. Y., March 16.

ALBANY.—For comb honey the demand is light; prices nominal—white, 12 to 13; mixed and dark, 11 to 12; fancy, 13 to 14; No. 1, 11 to 12; No. 2, 10 to 11. White extracted honey brings 10 to 11; light amber, in cans, 9; dark, in cans, 8½. Clean average yellow beeswax brings 35.

Albany, N. Y., March 19. H. R. Wright.

PHILADELPHIA. — Our market shows little change since last quotations. Our best white comb honey is moving slowly; 18 cts. case count; sold out on all undergrades of comb, which bring 10 to 12. We have had somewhat more extracted, buckwheat bringing 6½ to 7¼; amber, 6½ to 7½.

Philadelphia, Pa., March 17. Chas. Munder.

PITTSBURG.—Market is draggy—slow sale; no change in prices. We quote extra fancy comb honey, per case, $3.75 to $3.90; fancy, $3.50 to $3.60; No. 1, $3.00; No. 1 buckwheat, $3.40 to $3.50.

Pittsburg, Pa., March 12. W. E. Osborn Co.

BOSTON.—Sale of comb is steady; extracted cleaning up, short. We quote extra fancy comb honey, per case, $3.75; fancy, $3.25; No. 1, $3.00; No. 2, $2.75. White extracted honey, in barrels, 9 to 10.

Blake-Lee Co.

Boston, Mass., March 17.

LIVERPOOL.—Honey is in good demand at $1.20 to $2.40 per cwt. advance on last quotations. 179 packages offered and sold. We quote Jamaica, set pale, $24.00 per cwt.; liquid dark to amber, and setting, $20.40 to $22.08. Cuban, liquid dark to

amber and setting, sells at $17.28 to $20.64; set amber, $19.92 to $20.04. San Domingo, set dark to amber, brings $20.40 to $21.36; Chilian, $18.00 to $19.20. Beeswax is dearer; 8 packages were offered and sold. Jamaica, ordinary to fair, brings $42.54 to $44.34; other West Indian, $41.28 per cwt.
Liverpool, England, Feb. 23. Taylor & Co.

TEXAS.—No honey on the market at this time. Clean, average yellow beeswax brings, on very unsettled offers, from 27 to 35. J. A. Simmons.
Sabinal, Texas, March 14.

CLEVELAND.—Very little change in our market during the past 30 days. The demand continues light, but the supply is quite limited and prices steady. We quote fancy comb honey, $3.65 to $3.75; No. 1, $3.40 to $3.50; No. 2, $3.00 to $3.25.
Cleveland, O., March 19. C. Chandler's Sons.

MONTREAL.—Stocks are light, demand good. We quote extra fancy comb honey, per case, 18; fancy, 17; No. 1, 16; No. 2, 14; white extracted honey brings 14; light amber, in cans, 13; in barrels, 12½; amber, in cans, 12; in barrels, 11½.
Gunn, Langlois & Co.
Montreal, Que., March 17.

HAMILTON.—Honey is selling fast for first-class but dark honey is slow. We quote extra fancy comb honey, per case, $2.75 per doz.; No. 1, $2.50; No. 2, $2.00. White extracted honey, in 60-lb. tins, 13½; light amber, in cans, 11.
F. W. Fearman Co., Ltd.,
Hamilton, Ont., March 16. MacNab St. Branch.

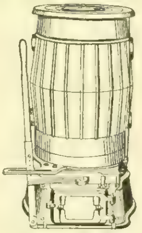
TORONTO.—Stocks are moving out freely at advanced prices; 60-lb. tins now selling at 14 cts. per lb. Eby-Blain, Ltd.
Toronto, Ont., March 20.

CUBA.—Light amber, in cans, brings 70 cts.; amber, in cans, 70. Clean, average yellow beeswax, per lb., brings 38. A. Marzol.
Matanzas, Cuba, March 13.

FLORIDA.—No honey on this market now at all.
Wewahitchka, Fla., March 16. S. S. Alderman.

MEDINA.—No material changes are noted in the honey markets in the past month. Comb-honey demand does not develop as well as we anticipated it would. Extracted is still in demand at top prices. The A. I. Root Co.
Medina, O., March 20.

VICTOR and HOME VICTOR
Multiple System
Water Heaters for
House Heating
Heats bath and kitchen boiler too. ONE STOVE AND ONE FIRE YEAR ROUND. There is nothing like it. Send for booklet.
S. V. Reeves, Mfr.
Haddonfield, N. J.



BANKING BY MAIL
AT 4%

Distance
is no hindrance to saving money by mail at 4 per cent compound interest with this bank.

A special BANKING-BY-MAIL department is maintained where deposits are received from all parts of the country.

Money may be safely sent in the form of check, draft, money order, or the currency by registered mail.

Write for detailed information concerning this BANKING-BY-MAIL plan which assures 4 per cent interest and complete safety.

THE SAVINGS
DEPOSIT BANK Co.
MEDINA, OHIO
A.T. SPITZER, Pres.
E.R. ROOT, Vice-Pres.
E.B. SPITZER, Cashier
ASSETS OVER ONE MILLION DOLLARS

BEE SUPPLIES Send your name for new catalog.
Dept. T, CLEMONS BEE SUPPLY CO.,
128 Grand Avenue, Kansas City, Mo.

Wanted: Old Combs and Slumgum
For lowest freight rate bill as "beeswax refuse." Our steam process removes every ounce of wax. We render on shares.
Superior Honey Company, . Ogden, Utah

Michigan Beekeepers

APRIL --- This month you should decide whether you will produce the maximum crop from your locality.

You can get it if you go after it.

The necessary new equipment should be "ROOT QUALITY." Success comes easier with the best goods. We sell Root's Goods in Michigan. Let us send YOU our catalog. . . Beeswax wanted; 31 cts. cash, 33 cts. in exchange for goods for it delivered here.

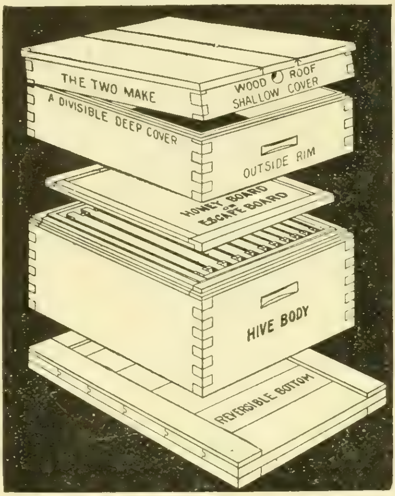
M. H. Hunt & Son, Lansing, Michigan
510 Cedar Street, North

Headquarters for Bee Supplies

Root's Goods at Factory Prices for Ohio, Kentucky, Tennessee

We carry a large and complete stock of bee supplies, and are prepared to give you prompt service. . We have just received several carloads of new fresh supplies. . . Send for our catalog.

C. H. W. Weber & Co., Cincinnati, O.
2146 Central Avenue

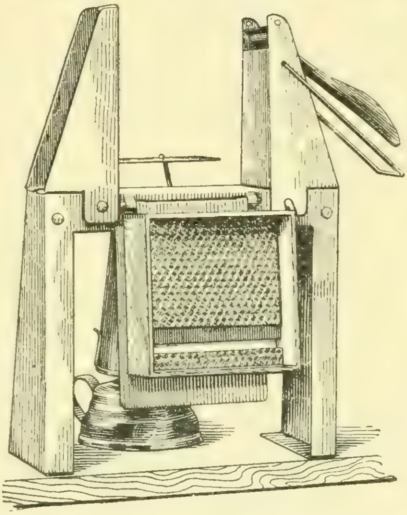


Protection Hives

Price for 5 hives with outside rims $13.75, without rims $12.00 F. O. B. Grand Rapids, Mich. Delivered to any station in the U. S. A. east of the Mississippi and North of the Ohio Rivers, with outside rims $15.00.

Mr. Jay Cowing of Jenison, Mich., has 235 of these hives in use and 40 in single-wall hives, his 1916 increase. He has just purchased another lot of Protection Hives and says the approximate extra cost of $1.00 per hive over single-wall hives is the best kind of an investment for him. He is a beekeeper of more than 15 years' experience and his 1916 crop was 580 cases of 32 sections each fancy comb honey. His winter and spring losses of bees from one cause and another have never exceeded 10 per cent even in the most severe winters, like 1908-9 and 1911-12. Mr. Cowan bought some of the first Protection Hives offered on the market and they have proven so satisfactory with him that he is still buying them.

They Are Double Wall, With Air Spaces or Packing as You May Prefer. The outer wall is made of ⅞ material and will last a life time. Send for a catalog and special circulars, showing large illustrations.



Section-fixer

A combined section-press and foundation-fastener of pressed-steel construction. It folds the section and puts in top and bottom starters all at one handling, thus saving a great amount of labor. With top and bottom starters the comb is firmly attached to all four sides — a requirement to grade fancy. Increase the value of your crop by this method. H. W. Schultz, of Middleton, Mich., in writing us says: "Your section-fixer is the best yet; can put up 150 sections per hour with top and bottom starters." Price with lamp, $2.75. Shipping weight 5 lbs. Postage extra. Send for special circular fully describing this machine.

Tin Honey-packages

A local wholesale house secured a carload of tin plate in September that was promised for April. Conditions are now even worse. When it is necessary to order tin plate a year or more in advance of the time it is wanted for use, advances in prices must be expected. The highest bidder will get the stock. Freight at this time is very slow and uncertain. Prices are liable to advance. It would be a wise thing to secure your packages for the 1917 crop. Our three-year contract is giving us some advantage over general market quotations. Send us a list of your requirements at once.

60-pound cans, one and two in a case.

FRICTION-TOP TINS.

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	...	12	6
Crates holding	...	...	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

A. G. Woodman Co., Grand Rapids, Michigan

Who Sells Supplies?
F. A. Salisbury

Who Sells Supplies?
F. A. Salisbury

We are in a position to make quicker delivery of goods to beekeepers for

The State of New York

than any other dealer--- being situated in center of the state, and having several railroads besides electric trolley. . . .

This last winter we have had more business than usual, and orders larger. . Beekeepers are more and more ordering their goods early--this is a wise thing to do. Sometimes the railroads are slow in making delivery. .

F. A. Salisbury, Syracuse, New York
1631 West Genesee St.

Personality of

LEWIS BEEWARE

No product can be better than the sum total of the skill, brains, and conscience of the men behind it. This gives the product personality.

What is the Personality of Lewis Beeware and the Company behind it?

The G. B. Lewis Company has been in the business of manufacturing Bee Supplies for forty-three years.—It has grown from a carpenter shop to a plant covering nearly six acres of ground, with an annual output of thirty million Sections and one hundred thousand Hives.—During all these years in the face of advancing prices on material and labor, the scarcity of suitable lumber, the competition of cheaper and inferior goods it has had many opportunities and inducements to cheapen its product at the expense of quality—but it has ever steadfastly maintained one standard of quality and workmanship. LEWIS BEEWARE IS THE SAME TODAY, WAS THE SAME YESTERDAY AND WILL BE THE SAME TOMORROW.

The business has been under one management and the lumber has been bought by one buyer for twenty years. He is still managing the business and buying the lumber. The head mechanic came into the factory when a boy. He has been supervising for forty years. The bee-hive superintendent has been making bee hives for thirty-three years. The section boss has been watching Lewis Section machinery and output for thirty-two years.

This is the Personality that goes to make up Lewis Beeware. Does it mean anything to you?

If you believe that ''a bee hive is a bee hive'' and are not particular about quality or workmanship, then any make of bee supplies will suit you; BUT—if nothing short of the best will do you, then you want

Lewis Beeware

Buy your metal goods and appliances where you like, BUT ''if it's made of wood'' insist on LEWIS BEEWARE—every package of LEWIS Hives and every crate of LEWIS Sections bears the BEEWARE brand. LOOK FOR IT—INSIST ON IT.

G. B. LEWIS COMPANY

Sole Manufacturers

BEWARE
WHERE YOU BUY YOUR
BEEWARE
WATERTOWN WIS. U S A
MAKES THE FINEST.

Watertown, Wis.

GLEANINGS IN BEE CULTURE

APRIL, 1917

EDITORIAL

THE HONEY OUTLOOK FOR 1917 BRIGHT

THE OUTLOOK for the honey-producers of the country is exceedingly bright. While the winter has been a little severe in some localities, especially in the Northwest and in the extreme South, it is reasonably certain now that there will be an enormous demand for extracted honey next season. The markets are practically cleaned up, and the new crop will be snapped up at good prices. There probably will be a good demand for comb honey altho the demand may not be so active.

In the early part of 1916 the clover crop looked to be so enormous that prices began to sag; but toward September they began to advance, and they have been going up ever since. If there should be a big crop in sight this season, prices will start off moderate again; but winter losses in some sections indicate that there will be a shortage of bees; if so, prices will be firm at the very start. See our " Just News " Department for reports on winter losses.

There has been a large amount of snow in the clover districts, and, so far as we know, in most localities clover is looking well. The prospects in the alfalfa and mountain-sage districts are also good. If there should be a good crop all over the country, prices will continue good because it will be impossible to glut the market next season with extracted. If the crop should be short, we predict that the liquid article will reach a figure that it never touched before except in its early history, when it brought 25 cts. a pound; but it will probably never reach that figure again unless the purchasing power of a dollar goes lower than it is now.

There is sure to be a big demand for honey, whether the Great War continues or stops. If it keeps on, the armies of the world will continue to ask for honey. If it stops, the demand will still be great on account of the general shortage in sugar and other food products.

TWO KINKS IN TRANSFERRING

IN THE *Beekeepers' Review* for May, 1916, appeared an article by A. H. Guernsey, of Ionia, Mich., in which he describes his method of transferring. The Guernsey method has been used by many beekeepers, and there have also been a number of other plans quite similar to it.

Mr. Townsend, in his comment on the plan, suggests a couple of " kinks." These we are incorporating into the plan itself, which then appears in substance as follows:

Do not transfer until the old hive is full of bees in the spring; then expose the combs by taking off the cover or by turning the hive upside down. Set the new hive on top with full sheets of comb foundation, or, better still, with drawn combs. Select a comb partly full of brood and put this in the center of the new hive. In four or five days the queen will probably be found laying eggs in this comb. When looking for the queen at this time, instead of taking the frames out, first lift the new hive off, in order to catch the queen above; otherwise, at the first disturbance, the queen is likely to run down below.

When the queen is found, place a queen-excluder between the two hives, thus keeping the queen in the new hive.

Supers may now be put on if conditions warrant, and the work will go on without interruption.

Close all openings or entrances at the bottom of the old box hive, so that not a single bee can get in or out. Then provide a wide slanting alighting-board to direct the bees to the entrance of the new hive, now one story above the old entrance.

Any time after 21 days replace the queen-excluder between the two hives with a bee-escape board put on upside down, so that the bees will be trapped out of the old hive below up into the new hive. It is easy for bees to go down thru an escape, but not so easy for them to work their way up thru it. To make it easier, tack a strip of wood across the board in such a way that the edge comes flush with the side of the hole in the escape. This gives the bees a foothold.

If desired, the old hive may be left in its place under the new one until some cool morning in October, when it can be removed

SACBROOD SOME LATER STUDIES

ANOTHER BULLETIN, No. 431, on sacbrood, by G. F. White, Bacteriologist in the United States Department of Agriculture, is before us. This same author in Bulletin 129, Bureau of Entomology, made a preliminary report on the same subject, a review of which appeared in GLEANINGS for March 15, 1913 page 171.

At that time the author had gone far enough to prove that sacbrood was contagious but not a serious disease; and he was then of the opinion that the cause was a filterable virus which he extracted from the juices of the dead larvae. The present bulletin confirms his previous opinions, but goes much further into the study of the disease. It contains 50 pages, detailing very minutely his experiments. While it does not set aside any tentative conclusions arrived at in the former one by the same author, yet it does go into the matter so completely and exhaustively that the conclusions may now be considered final.

Sacbrood, formerly called pickled brood, dead brood, heated brood, and sometimes confused with both American and European foul brood, especially the latter, has now been determined to be a distinct disease. Up till the time when Dr. White began his work it was generally called "pickled" brood, so named by Dr. Wm. R. Howard, of Texas. But Dr. White's work is so thoro that we must conclude that Dr. Howard was either working with another disease or else made a mistake in his conclusion as to the exciting cause.

Sacbrood after two or three days of sealing looks very much like American foul brood, particularly in the matter of perforated and sunken cappings. American foul brood is normally a disease of the *sealed* brood, while the European type is normally a disease of the *unsealed* brood. Sacbrood, therefore, is in one respect at least similar to American foul brood, and it has certainly been a great many times mistaken for that disease. The appearance of the dead larvæ themselves is more like that of European foul brood in that the skin or covering to the larva is never broken. European foul brood attacks the larva mainly before it uncurls. Sacbrood attacks its victim after it has stretched out on the bottom of the cell walls, and a day or two after it is sealed, or just about the time when it begins to spin its cocoon. It does not have the characteristic odor of American foul brood, nor yet does it have the pickled smell mentioned by Dr. Howard.

The general description of sacbrood in this bulletin is so minute and accurate that no one need make any mistake between the three forms of the brood diseases. Certainly a foul-brood inspector who would read this bulletin carefully, and who is familiar with the other forms of American and European foul brood, would be able to make a pretty acurate diagnosis. We therefore consider that this bulletin will be unusually valuable, because it will enable the expert beekeeper and the inspector to determine whether he has one of the diseases which are dangerous and destructive, or whether he has a mild disease that will disappear of itself, probably, within a month.

Up to the time this bulletin was published, the average foul-brood inspector could not be entirely sure whether he had a case of dead brood or American or European until he could have a bacteriological determination from Washington; and while as before he should submit all samples to the Government, as he has done heretofore, he will now with this latest bulletin before him be able to come to a pretty definite conclusion as to whether is is sacbrood or not.

The bulletin contains some very fine drawings, greatly enlarged, showing the normal and the diseased specimens of larvae in various stages of their development. The drawings alone will give one a pretty accurate idea of the external symptoms.

As to the exciting cause, Dr. White has proven out his former belief that it is due to a filterable virus. That this is the cause beyond question he has proven time and time again by macerating the bodies of the bees of the diseased specimens, and introducing the virus into a syrup fed to healthy colonies. With this he could make a case of sacbrood at any time, and about as bad as one could wish to see.

Very fortunately, sacbrood will disappear of itself within a month. The virus is easily killed by heating it to a temperature of 138 F. in water or 158 in honey. It is easily destroyed by the direct rays of the sun, but it seems to be peculiarly resistant to drugs.

The probabilities are that the disease is not transmissible thru honey, or at least after it has been off the hive for a month.

It could not, therefore, be carried thru bottled honey. Indeed, a temperature of 158 would kill any sacbrood virus that might be in the honey.

When it is remembered that the temperature of all bottled honey is about 160 degrees before being sealed, it will be clear that the disease could not be carried thru that medium.

Combs of honey containing sacbrood virus standing in hives or in stacked-up supers will become immune in a month. Dr. White says that the only way the disease can be carried is from the dead larva to the healthy. He even goes so far as to say that a frame containing sacbrood could be put into a healthy colony and probably not do very much damage. There is no danger that it may be carried on the clothing or on tools.

Copies of this bulletin No. 431 can be had for 10 cts. by applying to the Superintendent of Documents, Government Printing office, Washington, D. C. Every foulbrood inspector of the country should certainly have a copy.

* * *

OBJECTS TO SHALLOW EXTRACTING-FRAMES

MR. R. F. HOLTERMANN at the Ohio State convention objected to shallow extracting-frames on the ground that they necessitated an extra set of supers, frames, and general equipment. He has something like 1300 colonies, all on Langstroth frames. He said he would not take shallow frames as a gift if he were compelled to use them. It is a great advantage, he said, to have all frames uniform either for extracting-supers or for the brood-nest, both of which should be one and the same thing. The probabilities are that most beekeepers in the United States are in line with Mr. Holtermann in both theory and practice.

* * *

AUTOMOBILES FOR BEE-YARD WORK

IF ONE LIVES in a locality that is hilly and roads bad, he will have to depend on a wagon and team. If he lives in the country where roads are macadamized he may well consider the merits of the automobile truck. Little cars costing $325 without the body can now be secured. A wagonbox can be put on for $25 more, making a neat serviceable truck. While it may not be large it will carry from twelve to fifteen colonies at a trip; and in an afternoon one can move a whole yard of bees on these light trucks when it might take him all day to do so with a wagon.

Outyard beekeepers of the country are rapidly putting in automobiles. A light machine that can be used for carrying passengers or bee-supplies is one that the beekeeper should select.

* * *

COMB VS EXTRACTED HONEY FOR 1917

A LARGE number of comb-honey producers, on account of the great scarcity of extracted and an oversupply of comb honey the past season will produce extracted for this year. So many, in fact, are going over into the production of the liquid article that it is possible and even probable that section honey will be scarce next year. There is one thing certain: It will be impossible to produce too much extracted honey for 1917. Prices will be firm at the very start.

* * *

BEEKEEPERS' OPPORTUNITY HAS ARRIVED

NEVER WAS there such a great opportunity for the beekeeper before. The extracted honey is entirely cleaned up on the market, and every prospect is bright for an excellent season ahead. Beekeepers, take off your hats and shout! This is just what you have been waiting for. If there ever was a year when the beeman should get busy, now is the time. So take off your coats and get to work.

* * *

BEES VERSUS FARMING

FRANK COVERDALE made the statement at the Iowa convention that 300 colonies of bees with him were equal to the income of a 160-acre farm. If this statement were made at an ordinary farmers' institute, those who get their living from what they get out of the soil would be inclined to think Mr. Coverdale does not know what he is talking about. He is in fact one of the most successful farmers in all the West. He not only knows how to raise crops and fine cattle, but he is one of the best beekeepers in the United States. Even if he does advocate and practice furious swarming, he "gets there" just the same.

LOVED AND HATED

The Dandelion as a Honey-plant and as a Nuisance

By E. R. Root

A DANDELION blooms on Gleanings cover this month. A few days more and this same modest and brilliant, humble and tyrannical, hated and loved plant will be blooming over large areas of North America, Europe, and Asia—and how many other continents the botanist will not say nor deny.

Nearly every beekeeper whom we have met in our travels over the clover section of the country has acknowledged that he is "in bad" with many of his fellow-townspeople because they allege that the beemen are scattering dandelion and sweet-clover seed in their locality. "Why," they say, "dandelions are more numerous in this town than anywhere else; and surely Mr. Beekeeper has been scattering the seed around town for the sake of his bees."

In some localities where the soil is just right (a little acid), and where bees are kept, dandelions thrive tremendously. Beekeepers do not scatter the dandelion seed, but the bees so thoroly pollinate the blossoms that practically every seed matures. With the same soil conditions and no bees, dandelions do not appear to thrive. Here in Medina, where bees have been kept for fifty years, dandelions grow so rank and thick some springs that they seem to be about the only early-summer vegetation to thrive on our village lawns. This rank growth of dandelions extends even beyond the limits of our town, and a perfect sea of yellow fills the landscape in every direction.

One day when coming into Medina on a street-car a lady who was a resident of Medina (somewhat on the spinster order, and who knew everything and everybody's else business) said to another lady in the same seat with her and within the hearing of Gleanings' editor: "You will soon be coming to the dandelion town of Medina."

It was in the spring, when the dandelions were out in all their glory; and when the car arrived at our home town the anti-dandelion lady proceeded:

"Yes, you see there is no grass growing here—nothing but dandelions. You can see that it is all yellow as far as the eye can reach. This is the town where that man Root has scattered seed of the Giant variety all over the town. He keeps bees here, and the dandelion is a great honey-plant; but it is the ruination of all the lawns in the town. He ought to have to get down on his knees and pull every one of 'em up, so he had. It would just do that man good to have to get down on his knees in real earnest once. We call these miserable weeds 'Root's roses.'"

The landscape from the car window seemed to support unquestionably the indictment and warrant the punishment—from the home-owner's view.

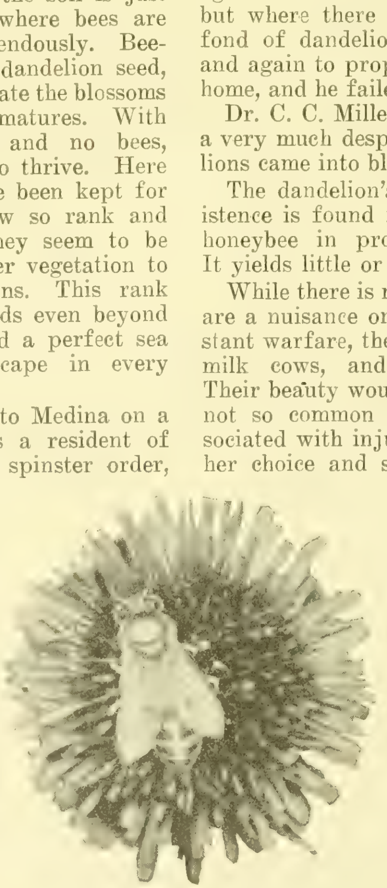
A striking proof of how bees (not their owners) promote the growth of dandelions was given in this vicinity several years ago. A man living 12 miles from Medina but where there were no bees, being very fond of dandelion greens, attempted time and again to propagate dandelions near his home, and he failed utterly.

Dr. C. C. Miller once told us that he was a very much despised man when the dandelions came into bloom.

The dandelion's one good excuse for existence is found in its great service to the honeybee in producing abundant pollen. It yields little or no honey.

While there is no question that dandelions are a nuisance on a lawn, and require constant warfare, they make fine pasturage for milk cows, and make excellent greens. Their beauty would be widely proclaimed if not so common and so unfortunately associated with injury to lawns. Give a cow her choice and she will grab up the succulent leaves of the dandelion in preference to almost any other grass; and such milk! the very finest and best that one can have.

While we do not advocate, and never have, the scattering of dandelion seed, yet, if weeds must be, the dandelion is far from being the worst offender on the weed list. Most weeds are just to be hated. The dandelion has some lovers—the bee, the cow, and the beekeeper.



A Dandelion Lover.

COMB HONEY --- FEW SWARMS

Heavy Winter Losses, and Excessive Swarming of Years Ago, Eliminated; Good Crops from all Colonies

By Mrs. S. Wilbur Frey

THIRTY-two years ago, at the time I was married, my husband and his father kept about thirty colonies of bees in box hives. These were approximately 13 inches square and 25 inches high. The entrance was full length on all four sides, made by a nail projecting from the bottom at each corner of the hive. The height of the entrance was governed by the distance the nail projected, and was anywhere from 3/8 to 1 inch.

An auger-hole in the top of the box, and an old-fashioned sap-bucket turned upside down on top, completed the equipment needed in the apiary. Whether a pail was full of honey or not was learned by sounding it on the sides, just as is done in selecting a ripe melon. Occasionally some very nice pails of white honey were secured, for the country was new. Raspberries and fireweed, or willowherb, abounded in the pine slashings on all sides. There was basswood in the forest, and plenty of white clover in the pastures and along the roadsides.

SOME OF OUR EARLY TROUBLES.

Winter losses often took half of the colonies. In the spring we could hardly tell which would rule the hives—mice, millers, or the bees. In those days the bees were all black, and we could count on swarming any time from May until August.

During the months of June and July it was a common occurrence to see all hands, including women and children, with bells, horns, tin pans, and guns endeavoring to stop a runaway swarm while the dog ran in every direction, leaping and barking, wondering what all the excitement was about. But even with all this fuss the bees sometimes escaped to the woods. Drones were very numerous, and we often dropped our work and ran out in haste only to find the uproar caused by these big noisy fellows out for an afternoon play.

The bees never forgot to celebrate the 4th of July, also the nice Sundays during the swarming time. Often after a rain, several swarms would come out before the drops had hardly ceased to fall, if the sun happened to show his smiling face.

OUR FIRST MOVABLE-FRAME HIVE.

Two years after we were married a friend bought a colony of bees in an old Langstroth hive with crosswise frames as shown in the illustration, Fig. 2. That first season he increased to seven colonies and sold his comb honey at 15 cents a section. We were very anxious to see this wonderful hive, and the following spring found us with fifteen new ones of this pattern, which we filled with bees during that season. But we were doomed to disappointment. When the warm days of another spring came all we had in the new hives was dirty combs and dead bees. We had tried to winter with no additional protection except an oilcloth over the brood-nest. That spring a catalog came to us from Kendallville, Ind., that revived our spirits. It explained how hives could be protected by chaff on all sides and on the tops, the chaff being held in place by a strip of cloth reaching clear around the hive, folding over at the top of the brood-nest, and having the lower edge tacked to the bottom of the hive.

My father-in-law did not approve of our new ideas; and when he saw us preparing to winter bees the second time in the new hives he requested us not to pack his share of the apiary, as he did not want *his* colonies to die. Our luck changed, however, for the packed colonies all lived, while those in over half of the unpacked hives died.

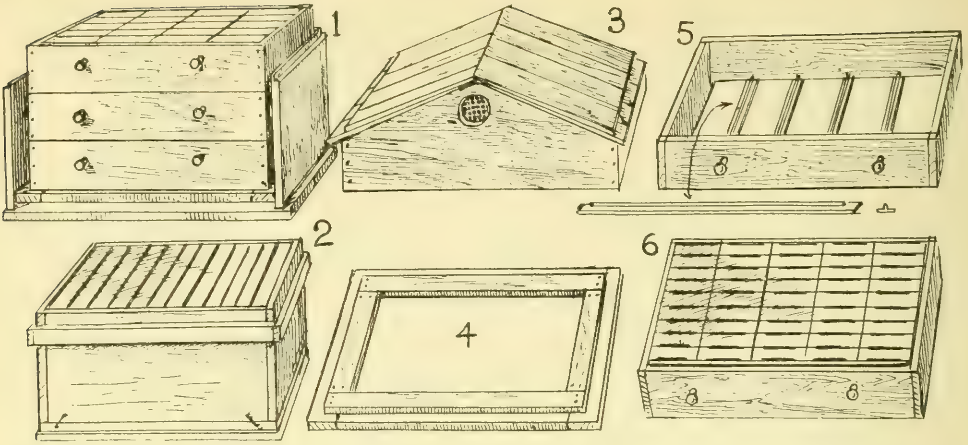
For several years swarming was the great problem, altho we occasionally had bad winter losses.

IMPROVED METHODS AND EQUIPMENT.

Beekeeping is very different now; for with our large hives and improved methods we seldom have winter losses, and swarming is nearly a thing of the past.

When we began to keep out-apiaries it became necessary to develop a method that would prevent swarming to a certainty. Perfect wintering and swarm prevention are the two points of advantage that I claim for my hive over all the other plans that I have used.

The super, as shown in the illustration, is very large, holding 45 sections. This easily satisfies the bees' desire for room, if other conditions are right. In my experience a large super is necessary for success in a comb-honey apiary. I have used this super for 24 years, and I have on hand over 300 of them. When I am



Details of Mrs. Frey's hive. The supers are enclosed in a large cap, Fig. 1, which with the deep gable cover Fig. 3 is large enough to hold three 45-section supers. To make the large cap fit the smaller brood-chamber below, a rack, Fig. 4, is put on first. Fig. 2 shows the original Langstroth hive used years ago.

careful to build the colonies up to uniform strength at the beginning of the season it is nothing to go thru a yard and find the work progressing in all the supers so nearly alike that no one can tell which colony is likely to be in the lead at the end of the season. We often take three of these large supers of comb honey from one colony in any fairly good season, and I have never failed to get a good crop of honey.

The first supers I used held only 28 sections. I had 150 of this size, and I used them exclusively for a few years. They seemed to have so many faults, however, that I tried 50 32-section supers with fence separators. I have used these supers right

One of Mrs. Frey's hives with the mammoth cap and cover for holding supers. The little girl shown is her four-year-old grandchild, Beatrice Cain. When she was three years old she folded sections, placed them in supers, and picked papers out from between sheets of foundation. She is the "queen of the shop."

along on ten or twenty colonies up to this time. I can control swarming when using these supers, but it is hard to stop the desire to swarm. Large colonies often refuse to work thruout the whole season when swarming is prevented.

I have three out-apiaries, all of them run for comb honey. The fixtures are now the very simplest. I use no separators, no queen-excluders, and never watch for swarms. I seldom lose a swarm until the white honey-flow is over provided I do my part right. Sometimes, however, I get interested in other things and stay away from the outyards until the bees begin to swarm; but it takes only one visit then, and swarming is ended.

LARGE CAPS FOR WINTERING.

I winter with chaff cushions over the brood-nest. The cap for the 45-section super is far better for wintering than any smaller sizes. With the smaller ones the bees die off more, consume more honey, and dwindle worse in the spring.

I have wintered in clamps packed with straw, and in rustic hives with straw packed about the colony, but the large caps and covers are the cheapest and simplest of all the methods I have tried. Several times when I was using the small-topped hives my winter losses cost me the price of the large caps and covers, and all I had to console me in the spring was daubed hives, empty combs, dead bees, and a few weak colonies.

A few years ago I could easily count a thousand colonies within a radius of five miles of our home; but a few hard winters, some poor seasons, and bee diseases have eliminated these until today I can not count fifty colonies not my own.

MY NEXT ARTICLE.

Next time I will tell how I dequeen all my colonies, and keep them strong until I am ready to requeen again, at the same time securing a larger crop than I possibly could if I allowed natural swarming.

One of my out-apiaries is eight miles from home, and one is three miles. I have always used horses in traveling, but we have an auto truck that I shall use this season. This will shorten the day's work very materially; and, besides, there will be no horses to feed and care for while I am at the yard.

Sand Lake, Mich.

SPRING MANAGEMENT OF BEES

Always Help First those Colonies that Need the Least Help, Leaving the Weakest to the Very Last

By Dr. C. C. Miller

IN the spring, under the stimulus of nectar and pollen brought in, the queen is not very long in getting filled with brood and eggs all the cells that the bees are capable of covering. Until this happens there is nothing for the beekeeper to do unless it be to see that the bees are kept warm and have abundance of stores. Often, however, when this point is reached, there will be found a very great difference in the strength of colonies. Some may have only enough bees to cover a patch of brood not larger than the palm of one's hand, while others will have brood in five, six, or more combs.

There is a great deal of difference as to the rate of rapidity with which a colony having three frames of brood—let us call it three brood, for short—builds up, as compared with one having only one or two frames partly filled. In the white-clover regions of the North the first will go right along increasing in strength and be in good condition for the clover harvest, while the latter will remain stationary thruout the cool days of April, perhaps losing in strength for a time, and become fit for storing a surplus only when the time for storing is over. There is a good reason for the difference. In the stronger colony the proportion of outside bees needed to keep up the heat of the cluster is very much smaller than in the smaller one. While only a fourth of the bees may be needed for an outside wall in the first case, it may need seven-eighths in the latter case.

The aim, then, should be to bring as many as possible of our colonies, as soon as possible, up to that point of strength where they will go right along increasing. This is generally called equalizing, and generally it is equalizing, taking from the strong to give to the weak, but in some cases equalizing the strength of colonies would be the very thing to defeat our purpose. Suppose we have only three colonies, two of them so weak that, if left to themselves, they cannot build up in time for the harvest, while the third is just strong enough so that it will build up in time to give a fair account of itself in surplus. Now suppose we equalize by taking from the strongest and giving to one or both of the weaker. But as the strongest was barely strong enough to be ready for the harvest, we have now weakened it so that it will store no surplus, and at the same time helped the others so little that we get no surplus from either of the three. So instead of increasing our prospects for a crop, our equalizing has decreased them.

The thing to do is to take the opposite course, and, instead of taking from the strongest, to add to it. So we will unite one of the weak colonies with the strongest. That will make it stronger, and it will develop still more rapidly, so that before long it will be able in its turn to give aid to the remaining weak colony, enough to bring up this latter to storing strength. Thus, altho we have one less number of hives containing bees, we have doubled the number of colonies yielding surplus.

So when we have a lot of weaklings on hand in spring, the right plan is to begin by strengthening those that are already the strongest.

But this condition of affairs is not very likely to be found in the apiary of an experienced beekeeper. Most of his colonies are strong enough in spring so that they will easily grow into good storing strength, while with proper management those that, left to themselves, would not be able to do anything on the harvest, can be brought up so that every colony in the apiary will be a storer.

The way to do this is to draw from the strong and give to the weak. That looks easy—is easy—but it is also easy for the beginner to proceed in the wrong way, and thus fail of full success. His first thought is likely to be that the weakest of the weak ones is the one that first needs help, and so he works on that basis, constantly giving help to those that need it most, leaving the stronger of the weak ones to be helped last. The rule should be exactly the opposite: *Always help first those that need the least help, leaving the very weakest to be helped last.* Along with this rule should go another: In drawing from the strong to help the weak, *never reduce a strong colony to less than four brood.* With these two rules constantly kept in mind there can be hardly any danger of making mistakes.

Let us now have a distinct understanding as to what is meant by "four brood," "a five-brood colony," etc. Nothing is entitled to be called a brood unless at least half the comb on each side is filled with brood, or brood and eggs. If a colony has brood in four of its frames, and one or both of the outside combs are less than half filled, no matter how full the two central combs are, that's not "four brood," but "brood in four." So it may happen that a colony with two brood may be stronger than another colony with "brood in four." For there may be more brood in the two combs of the one colony than in the four combs of the other.

With this definition and our two rules in mind, let us on a good flying day in spring proceed to look thru the apiary; and suppose the strongest colony in the apiary has "brood in five." Nothing doing. For if we take one of its best brood from this strongest colony, it will be left with "brood in four," and our rule says we must not make it less than "four brood." But if, on this or a future day, we find a colony with five brood, we will take from it one brood with all adhering bees, making sure that we do not take the queen. The comb we take will be one of those containing the most sealed brood.

Where shall we put the brood and bees we have taken? In the apiary we may have all the way from "brood in one" up, and any colony having less than four brood needs help. So the first colony that we come to having "brood in four" will receive our frame of brood and bees. We need not, however, be so very particular, but give it to a three-brood colony if we happen to find one of that kind before reaching a brood-in-four colony.

Putting into a weak colony a frame of brood with strange bees will not endanger the queen so long as her own bees are so greatly in the majority; but it is well to take pains to put the strange bees at one side of the brood-nest, of course next to the brood.

In taking brood from a strong colony it may happen that we cannot find the queen. In that case we carefully brush off all the bees, but are particular to give this beeless brood only where we are sure there will be enough bees so that no brood shall be chilled.

In making our rounds we arrange the combs in each hive so that the first comb at the furthest side from us shall contain no brood—generally it will have pollen—but next to it shall commence the brood. Then the next time around it will not be necessary for us to go any further than the first brood on the nearest side in order to know just how many brood are in the hive. We will also make a record of the number of brood in each hive.

In our rounds we may come to a colony that has more than five brood. In that case we take all the brood it can spare, only so we leave four brood in the hive.

In this way we make the rounds of the apiary, drawing brood and bees from each colony that has five brood or more, and giving to each colony that has less than four brood. A colony with four brood will be left as it is.

It is possible that there are so many strong colonies in the apiary that in this first round we shall be able to bring up to independent strength all the colonies in the apiary. In that case a brood-in-three colony will need two brood, and a two-brood colony will also need two brood. There will now be so large a proportion of strange bees that the queen will be endangered. Two ways out of the difficulty are before us. We may give a single brood today, and two days later another. Or we can give queenless bees which will treat kindly a strange queen. For this purpose we will draw brood and bees from the strong colonies, and put them in an empty hive on a new stand. All the better if there are enough to pile them two or more stories high. All the field-bees will return to their old homes, but abundance of young bees will be left. Two days later we can take these queenless bees with the brood, and, without any preliminary, use them wherever needed, no matter how weak the colonies to which they are given.

Unless we have been so exceedingly fortunate as to bring up to independent strength all colonies at the first round, we will repeat the process every ten or fifteen days until every colony has at least four frames of brood. After the first time around we shall have the advantage of knowing in advance something about the strength of each colony, and which ones are strong enough to yield brood. So it will be a good plan to go first to a few of the strongest and get an advance stock of bees and brood, say half a dozen or so, if the apiary is of considerable size, keeping them in an empty hive to be used as needed.

Of course the number of strong colonies is constantly increasing, and the number that need help at the same time decreasing, so that at the last you can give as many brood as needed to each needy colony. The only safe way to give bees with several brood is to have the bees queenless, as already explained. The last ones to be helped are the very weakest, even down possibly to one or more with brood in only one, a mere handful of bees, the queen being the only really valuable part. As the season is now becoming advanced, bringing such a colony up to four brood will not be enough. It should be brought up to 6 or 8 brood, and even then it will have nothing but young bees. But each day the number of bees going afield will be rapidly increasing, and at least part of the flow can be utilized. But if the plan outlined be followed up the number that cannot be brought up to have the benefit of the full harvest will be very small, if indeed there be any.

Marengo, Ill.

MAKING THE WORK COUNT

Methods of Assembling Frames that Improve the Quality of the Work and Shorten the Time of Doing it

By H. H. Root

THERE are two ways for a beekeeper to increase his profits. One way is to get more money for his crop, and the other to get more crop for the labor performed. This article has to do with the saving of time in performing a very important part of every beekeeper's labor; namely, the assembling of brood and extracting frames.

There have been a large number of different forms described in GLEANINGS for facilitating this work. I have tested many of them and found them good, but none of them, apparently, are as rapid as the plans described herewith.

When nailing frames one at a time we use a simple form, shown in Fig. 1. This consists of an upright framework containing a groove of exact size to hold a top-bar. When the top-bar is placed in position an end-bar is put in place. Two nails are driven down thru it into the top-bar; then the end-spacing staple is driven in. The top-bar is reversed, and the other end-bar similarly nailed. Then the frame is taken out of the support, laid down on the bench (top-bar down), and the bottom-bar nailed on. Reversing the frame, letting it rest on the bottom-bar, and driving one nail down thru each end of the top-bar into an end-bar, completes the job. Forty to forty-five frames an hour is easy work.

For several months we have been using

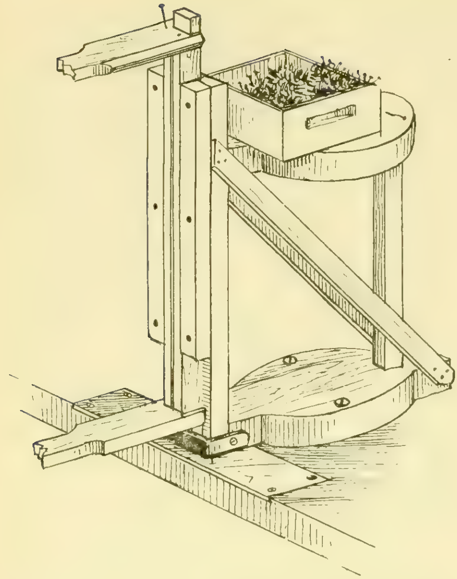


Fig. 1.—Form for nailing frames one at a time.

with a great deal of satisfaction a plan of nailing frames, the principle of which was originated by Wm. Cary, of Washington, D. C. Briefly speaking, the plan consists of a box or clamp large enough to hold ten frames, so that all ten bottom-bars and top-bars can be nailed at once. As shown in Fig. 2 there are only six boards needed to make this clamp. It is preferable that these be made of hard wood. The two end pieces, B and B', are fastened to the side pieces, A and A'—nailed solidly at one end and held by bolts and wing nuts at the other end. About an inch and a quarter from each end of the side pieces cleats are nailed to prevent the loose inside end pieces, C and C', from falling over. These loose inside end pieces are merely to support the end-bars when they are dropped in ready for nailing on the bottom-bars.

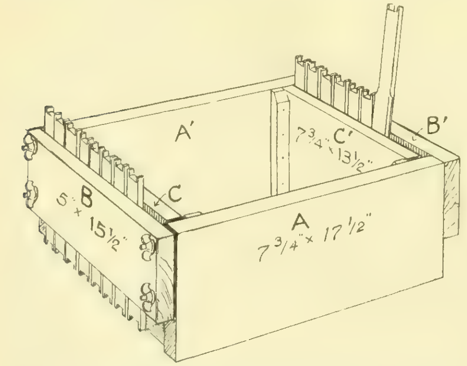


Fig. 2.—Form for nailing ten frames at once. V-shaped pencil-marks on the upper edge of B and B' assist in locating the end-bars with the V edges turned right. The V edges of the end-bars at the left must be turned to the back while those at the right turn to the front.

To assemble the clamp, cut the heads from four carriage-bolts about ¼ inch by 4, and have a 1-16-inch hole drilled close to each end. Bore two ¼-inch holes into the end of each side-piece of the box and carefully drive in the bolts, taking the precaution first to make a mark on each one a uniform distance from the 1-16-inch holes drilled in order to know their location after the bolts are driven in, and then drive a stout nail thru the side of the boards and thru the holes in the ends of the bolts, thus locking them firmly so that they can not be pulled out. Bore the holes in the end-piece of the box a trifle large, about 5-16, so that the board will easily slide on the bolts. Washers and wing nuts complete the contrivance.

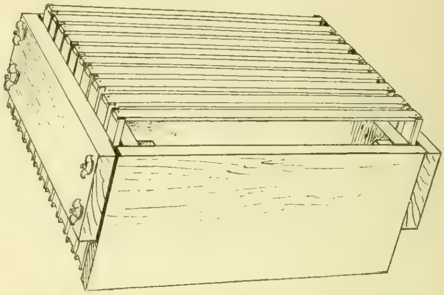


Fig. 3.—Nailing on the ten-bottom-bars.

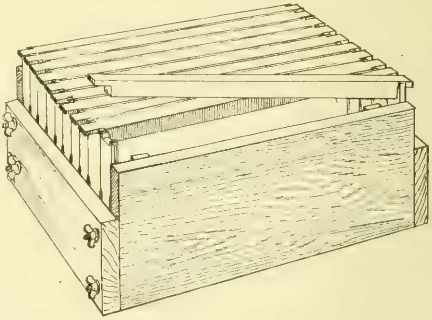


Fig. 4.—The entire box reversed ready for nailing on the top-bars. Just before nailing, the wing nuts are tightened so that the frames will be held square and rigid.

HOW TO NAIL THE FRAMES.

Locate the box on a good solid bench; drop the loose inside end-pieces in position and put in the twenty end-bars, upside down—ten at each end. In order to have the V edges all turned the right way it is a convenience to have V-shaped marks on the edge of each end-piece, as explained, Fig. 2; then by being careful to have the V edges on the end-bars correspond to the V's marked, the frame will always be nailed right.

Slip the ten bottom-bars into position and

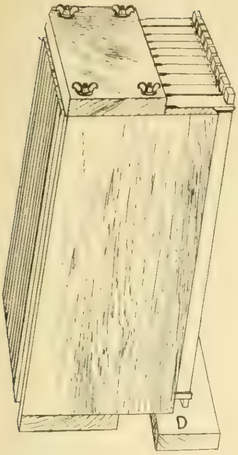


Fig. 5.—Ready for nailing thru the end-bars into the top-bars.

nail them, driving one nail thru each end down into the end-bars, Fig. 3.

Quickly reverse the entire box and its contents, and put the top-bars in place. Before nailing them, tighten the wing nuts, thus crowding the parts together rigidly, all perfectly true and square. When this is done, and not before, drive one nail thru each top-bar down into the end-bar—a little to one side of the center so they will be out of the way of the end-spacing staples to be driven in later.

Next, turn the box on end, Fig. 5, with the lower ends of the top-bars resting on a 1½-inch hard-wood board, D, firmly nailed to the bench. Drive two nails thru each end-bar down into the top-bar.

When driving in the end-spacing staples, instead of using one small block with a saw-kerf in the end to drive the staple, take a 5-16-inch hard-wood board about fifteen inches long; lay it on the end-bars up close to the top-bars and make a pencil-mark directly over the center of each end-bar.

With a saw make a cut at each pencil-mark a trifle deeper than the staple is wide. Tacking a piece of heavy tin along the edge of the thin board completes the staple-spacer.

Lay this spacer in position, Fig. 6, E. Drop ten staples into the saw-cuts; give each one a slight tap, then quickly drive them down flush with the top of the board. The board may then be removed, and all the staples will be found driven in exactly the right place—all of them to the right depth.

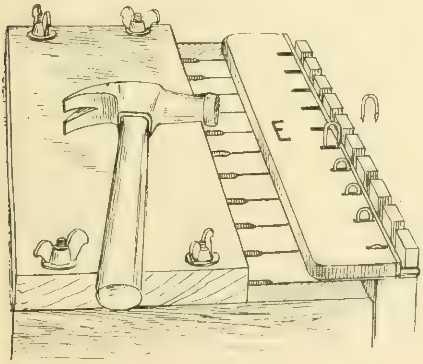


Fig. 6.—One staple-spacing block for all ten staples.

After turning the box and the frames over on the bench, by loosening the wing nuts the box may be readily lifted off, Fig. 7, leaving the ten frames all complete.

It is not at all difficult to nail fifty frames an hour by this plan, every one of them absolutely square. Each group of ten frames requires about twelve minutes, the time being distributed about as follows: Locating the end-bars and nailing on the bottom-bars, three minutes; nailing on the top-bars, eight minutes; driving in the staples, one minute. By working rapidly, especially after a little practice, it is possible to nail sixty frames an hour, ten minutes to each ten frames. For assembling the frames, driving eighty nails and twenty staples, that is not so bad.

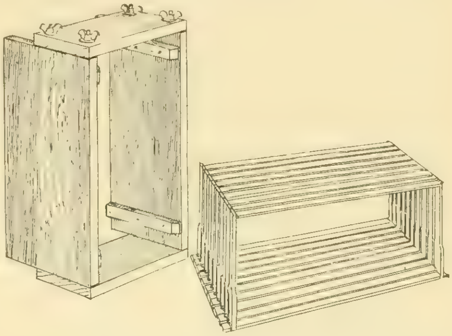


Fig. 7.—Clamp loosened and lifted off, leaving the ten frames all complete. Time, twelve minutes.

WIRING THE FRAMES.

For wiring frames direct from a spool, some sort of device is needed to hold the frames and the spool of wire. There are some very good wiring-boards on the market, and quite a large number of practical forms have been described in Gleanings. I have found the one shown in Fig. 8 very satisfactory. A super spring stapled to the board keeps a slight tension on the spool, prevents the wire from springing over the ends of the spool, and makes it unwind properly and smoothly. As the wire is used

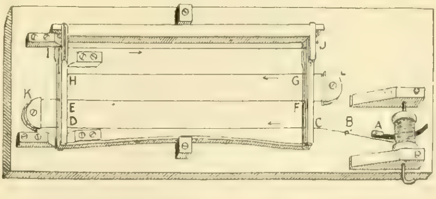


Fig. 8.—Form for wiring the frames. An inverted super-spring A held by a staple prevents the wire from kinking when it is slack.

up, the diameter becomes less, hence there is less pressure of the spring. This is just as it should be; for when the wire is nearly all gone it unwinds harder, hence the decreased pressure evens it up very nicely.

The wire from the spool passes first under a staple, B. The end of the wire is passed thru the hole C and enough wire pulled thru to reach six or eight inches beyond the other end-bar. Then it is threaded thru D, passed around the smooth half-round block K, and thru E. Again enough wire is pulled thru to reach eight inches or so beyond the first end-bar, then the wire is passed thru F, around the curved block L, and thru G. About three feet more of wire is then pulled thru, the end passed thru H, all the slack pulled out, then thru I and finally thru J, where the end is secured firmly by being wound around a tack, and the tack driven home. With the right hand on the crank of the spool the slack may be all pulled out, then the wire slipped up over the half-round blocks K and L. By keeping a constant pressure on the crank while "picking" the middle two wires with the left hand the proper tension may be secured with little or no effort. The wire is then fastened by winding around a tack in the upper edge of the end-bar over the hole C.

The diameter of the half-round blocks K and L must be equal to the distance between the holes in the end-bars, and these blocks must be made of hard wood so that the wire will pull around them smoothly.

The block M is so located that the bottom-bar is pushed up out of line. This serves the purpose of holding the frame firmly; and then when the frame is taken off the board, by reason of the fact that the bottom-bar springs back to its usual position the wires are tightened slightly. The various blocks, as shown, are located with the idea of holding the frame firmly, and yet being out of the way for the threading of the wire back and forth. With this board it is an easy matter to wire ten frames in ten minutes, and keep it up right along.

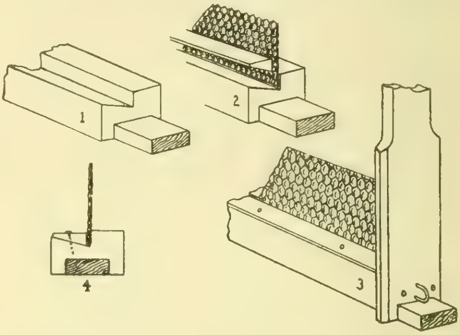


Fig. 9.—Foundation secured by a three-cornered wedge nailed in.

IMBEDDING THE FOUNDATION.

Where one has access to an electric-lighting current an ideal way to imbed the wires in the foundation is to utilize the current for heating all four strands at one time so

Continued on page 304

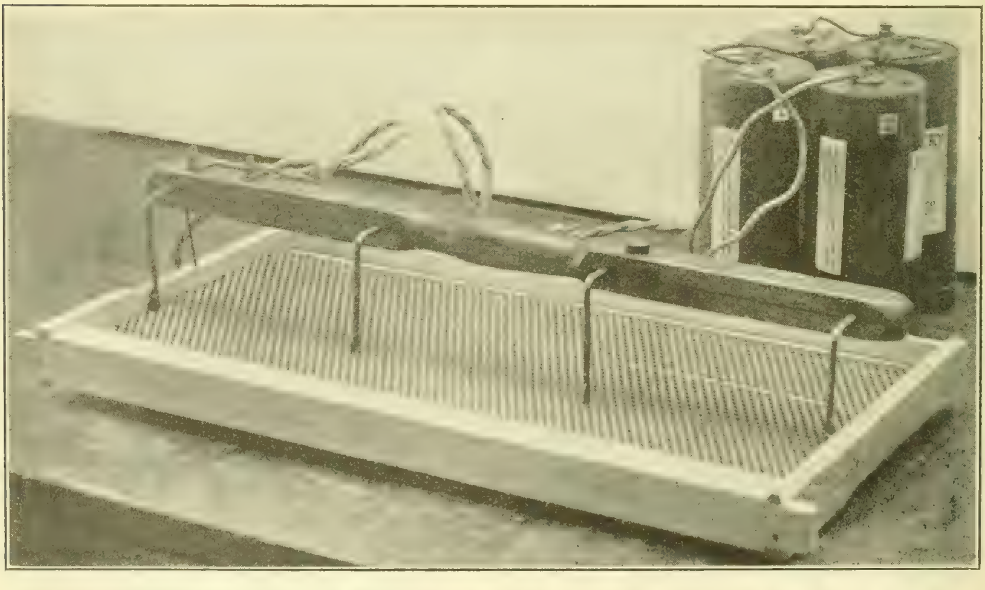


Fig. 10.—Imbedding wires in foundation by means of four ordinary dry cells which heat one strand at a time

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

"Please tell when bees can be set out of the cellar to the best advantage, and any other matters regarding their removal from the cellar that you think of importance."

Perhaps at no time of the year is beekeeping more fascinating than at the time when we set the colonies out on their summer stands. Regarding the time of doing this there seems to be a difference of opinion among practical beekeepers. Some men of large experience in this matter think it better to set them out on the first favorable day in March, telling us that these early flights are beneficial in many ways—that they largely prevent what is called "spring dwindling," which, some years, takes off 50 per cent of the colonies during April and May. Others believe it is better to wait till the soft maple and elm are in bloom, or even later, if the prospects for warm weather are not favorable, claiming that, with the advent of warm weather, each bee alive at that time can bring to maturity three young bees, while in early spring it takes three bees to bring one on the stage of action.

My experience, covering nearly half a century, tells me that the best time depends upon several conditions. If the bees have wintered well, so that they remain very quiet, almost dormant, in the spring, I believe it is better to wait until settled warm weather before removing them from the cellar. On the other hand, if the conditions have been such that early spring finds them very restless and uneasy—many leaving the hives and dying—my experience has been that the sooner they are set out the better. There is often, however, what may be called an intermediate condition when it is not easy to determine when to remove them, there being no material difference, apparently, whether they are set out in early March or in late April. Those set out consume more stores; but if there is no very severely cold weather after they are set out they will be enough stronger at the beginning of the white-honey harvest more than to offset the extra stores consumed. On the other hand, if there is very severe weather, especially if it comes after they have been set out long enough to have their most advanced brood nearly ready to emerge, they may be considerably weaker than those left in until later. As the weather cannot be foretold, my practice in this intermediate condition has usually been to set out a part of the colonies quite early, and to leave the rest until the prospects for settled warm weather are well assured.

There is another matter on which there is a difference of opinion; namely, whether it makes any difference whether each colony is set upon the same stand it occupied the previous season. Where lack of room requires that the hives be set close together, and for any reason the colonies must all be set out on the same day, I think it is better to set each colony on its old stand, then there is less danger of mixing.

In bringing the colony from the cellar, a wet cloth should be thrown over the entrance, thereby causing the bees to remain in the hive till it is carried outside the cellar door. Then the cloth should be rolled back at one end of the entrance to make room for the nozzle of the smoker, and enough smoke is blown in to cause the bees to run away with a humming sound. The hive should now be carried to the desired place, two or three more puffs of smoke blown in at the opposite end of the entrance, and the hive set on the stand it is to occupy. In this way no bees come out and get lost as they are carried from the cellar; they come out as slowly as if they had been wintered on their summer stand, and the location is as carefully marked as if they had never been carried into the cellar. Cotton cloth, folded to the right size to tuck in at the entrance, is very satisfactory when bees are to be moved only short distances. The cloth should be kept wet, or as damp as possible, and not drip. I have found this plan far preferable to blocks of any kind.

After the bees have had their cleansing flight the entrance should be contracted to suit the size of the colonies, giving about two inches in length to the weaker ones, and five for the strongest. A fairly still day is preferable for setting bees out of the cellar; but a moderate breeze does no special harm. In the case of an out-apiary, going ahead even with quite stiff wind is generally preferable to waiting for a better day.

While it is not often too warm for setting out the bees in early spring, care must be used if the temperature is from 75 to 80 degrees in the shade, for those first set out will have had their cleansing flight and rush in as robbers on those that have just commenced to fly, and thus robbing will get under way before those set out later become prepared to protect themselves against a general onslaught. On such days it is best to wait till 3 or 4 o'clock in the afternoon, then work as rapidly as possible.

Borodino, N. Y. G. M. Doolittle.

* * *

Letters from a Beekeeper's Wife

"The Honey House," April 1, 1917.

Dear Sis:

With forsythia and violets blooming, frogs croaking and Rob's hammer sounding, I really believe that spring has come. The hammering means that we (Rob doing the work and I the encouraging) are putting up the honey-house we have talked about for so long. I am delighted to think that at last I'll be rid of the big tank from the back of the stove and all the sticky mess of bottling in the kitchen. Every bit of the preparation and care of honey is to be done in the honey-house. There are to be two big tanks to hold it all and a power extractor, and we are putting in all the little labor-saving devices that Rob had put in the kitchen for me after your visit. We worked over the plans just as you showed us how for the kitchen, and I believe that we are almost, if not quite, crazy now on the subject of economy of motion.

That's our slogan, and the children have taken it up and watch everything we do to see if they can't catch us "wasting muscle and nerve energy." The girls have a system of marks and keep count to see if the one whose turn it is has to make more than one trip to the kitchen to carry out plates and bring in dessert.

When it came to planning the honey-house, Rob and I went thru every motion from the time the frames of honey are carried into the house until the cases of bottles are carried out, to see that every arrangement of tools, tables, and appliances will make for economy of motion and nervous force. Do I talk like your much quoted efficiency expert? To begin with the door, it swings both ways so that one can go in and out with hands full, and the work begins just inside the door. From there on it goes on right around the room, the tables at the proper height, tools for each process kept at the place where that work is to be done, etc., and it all ends up at the other side of the door, where there is space to stack the crates of bottled honey. To have all the work on one floor has necessitated a little extra outlay for a honey-pump, to pump the honey from the extractor into the tanks, but the one-floor plan simplifies things for us and saves many steps.

For instance, a tray on wheels carries a super full of frames to the capping tanks. There we'll stand ready to take out a frame with both hands. Then one end bar rests on a nail for the purpose on a bar of the capping tank, thus freeing the right hand, which will reach for the steam uncapping-knife right under the hand on the edge of the tank. The cappings will fall into the tank where they are to drain, the knife is replaced and the frame is placed on a rack where Rob can reach it easily. We have not put in a capping-melter yet. Rob will work at another part of the capping-tank. When enough combs are uncapped, he will put them into the extractor, which is beside him. Doesn't it sound fascinating? We are eager to see how much time we'll save, and to see whether it all works out as well in practice as it does on paper. Of course we probably have made some mistakes, but we hope no serious ones.

One more thing that Rob thought of was a fan which goes with the power that runs the extractor. That will be a wonderful help. I don't mind being wet with perspiration alone, nor sticky all over with honey alone—but I abominate the combination!

I long to be outdoors hammering too, instead of housecleaning, but this is my job and I must get to it instead of writing at such length to my sister. There is so much of woman's work that I don't enjoy and so much of man's that I do, that I am glad it is no longer taken for granted that women shall do housework and nothing else. "Woman's sphere" is the whole world now if she wants it. I don't believe she does want it all tho—anti-suffragists to the contrary. I should hate to think that the time would ever come when she would be the dominant sex, as is the case in the beehive. If the time ever did come, thousands of years hence, that all men were fat and useless and lazy (there are plenty of such drones now, goodness knows!) and all the women but one did the entire work of the country, made the laws and saw that they were carried out, do you suppose that these stern females would be as relentless as the worker bees? At the approach of winter, would they starve their husbands and carry part of the children outdoors to freeze, for fear there would not be enough bread to go round? I shudder to think of it! Would they keep the mother of all the children indoors working with never a respite until she grew old and feeble, and then would they kill her? I fly from such horrible thoughts to my attic which must be cleaned today. I wonder if you are housecleaning. Give the baby a squeeze from his

Aunt Mary.

The San Joaquin Valley Again

In the February number, pages 108-110, we read an article on the San Joaquin Valley—the enormous waste and the great opportunity for progressive beekeepers. It is very evident from the general character of the statements contained in this article that they were written by what the writer herself terms a "new comer," or at least by a person who does not understand the actual conditions here. Having had twenty years' experience as a beekeeper in the central part of the San Joaquin Valley, and being for several years Inspector of Apiaries of Kings County, I believe I am fully qualified to write of actual conditions.

Articles regarding California often remind me of the reporter who interviewed me while in the East selling a carload of honey. I had just given his paper a liberal advertisement; and to show their appreciation (or, perhaps, to fill up space) he wrote up a news item under this head—"Gets Rich in Bee Business; Former Local Man has a Thousand Colonies; left here Twenty Years Ago; takes Bees from one Orange Grove to another in California." Sounds very wonderful, doesn't it? As a matter of fact I have more than a thousand colonies, but lack a great deal of being rich. Honey was selling at that time for $3\frac{1}{4}$ to $3\frac{1}{2}$ cents in California, and it was to break even with the world that I was selling a car of honey in the East at retail prices.

What is waste? We are told that it is very noticeable in California where peaches, grapes, and many other things are fed to the hogs. Perhaps if our friend had investigated the prices of grapes at that particular time and place she would have found that they were worth more per pound as hog feed than they could be sold for on the open market; or they might have been a little too ripe to stand the shipment to eastern markets. Climatic conditions sometimes have much to do with the way fruit is handled. Last year many tons of grapes were ruined on the drying-trays by rains (grapes dried in the sun are raisins). Much of this fruit was hauled to wineries before it was entirely spoiled; but many men have scruples when it comes to furnishing grapes for this purpose, and perhaps the next best thing financially was to feed them to the hogs. Persons familiar with the fresh-fruit situation in California know and understand these things. The same is true in other lines. Watermelons, pumpkins, piemelons, and squash all make good stock feed. Horrible, isn't it, to feed great big juicy watermelons to stock. The land in most sections of the valley will produce from 50 to 100 tons of pumpkins and squash per acre, and sell as stock food for from $1.00 to $2.00 per ton. Is this return so bad

Some California wax that was not wasted.

FROM THE FIELD OF EXPERIENCE

as to be called wasted when sold or used as stock food? But let us return to the bees.

In many sections of this great valley, alfalfa is king, and there *are* great herds of dairy cattle; but the dairy herd is the enemy of the beekeeper, for the alfalfa is cut before the bloom, or at least before the bees have much of a chance to work. Large dairy herds as a rule do not go hand in hand with fence corners or waste places where alfalfa is allowed to go to seed, but it does mean section after section of alfalfa with an occasional fence. In these sections there is little or no wild feed. The one chance for a beekeeper is alfalfa that is being raised for seed, and the uncultivated places where wild feed such as melilotus and alkali weed are abundant.

In the fruit sections we have thousands of trees of all varieties, and many thousands of grapevines, the bloom of which yields no surplus. It is true that much honey could be gathered from the fruit-trees; but the bloom lasts only a short time, so it serves only to build up the colony, and then it is either feed or move; but even with these drawbacks you will find thousands of colonies of bees here and there thruout the valley in likely locations. Nowhere in the valley have I heard a cry from fruit-growers that there are too few bees for proper pollination; in fact, not many years ago the pear-growers of this district threatened to legislate against them.

This leaves us for the honey surplus; then the oranges of the eastern foothill region, the wild feed of the uncultivated sections, combined with the alfalfa on the floor of the valley, and the sage and wild buckwheat of the western foothills. We get some honey and pollen from the fruit bloom, and then must feed until the alfalfa and wild feed comes on or move to the oranges on the east, or to the sage and buckwheat on the west, or our bees will naturally suffer.

MIGRATORY BEEKEEPING.

What does this moving mean? I will give a little of my experience. My home is located about forty miles from the oranges and about sixty to the nearest sage. You will note that the floor of the valley is about 100 miles across at this point. The location in the sage that I moved to last year was 76 miles, and in returning to the alfalfa flow the move was 83 miles. It is not such a task to move early in the season to the sage; but just think of moving 83 miles about the first of July, your bees just from a honey-flow, and the average daily temperature somewhere between 90 and 100 degrees in the shade! I have a motor truck and move 56 colonies in two-story hives, at one load. I had very good success in moving the 83 miles. One man and myself would start with a load as early in the evening as we could possibly get away, and unload them on the new location before daylight. We made one trip every night for five nights in succession—a distance of 166 miles a day. Does this appeal to any one as a woman's work?

P. H. Bales, Hanford, Cal., with his wife and daughter and an old friend from the East. Mr. Bales is a beekeeper having more than a thousand colonies.

Beekeeping as a side line is a curse to the industry. This great state is one of special-

Continued on page 304

FROM THE FIELD OF EXPERIENCE

About that Change from Comb to Extracted

After reading the editorial on page 91 I took it upon myself to do a little investigation among beekeeping acquaintances. Twenty-two letters written to comb-honey producers brought sixteen answers saying they would change in whole or in part to extracted. Two did not reply, while four will not change, but try to produce more comb. Now, if this indicates anything like a fair proportion of changes likely to occur it seems to me there is a slump ahead for extracted honey. Of these beekeepers, not one lives west of the Mississippi River. It is my opinion that no comb-honey producer east of the Mississippi will gain anything by changing to extracted. I have produced extracted exclusively for the past seven years; but having 200 comb-honey supers I will use them this year.

The second point indicates that the market is overloaded with comb honey, and prices easy. Would it not be proper to call it brick honey, for that is getting to be the name used by those who "got stuck" on immense quantities of this so-called *western* honey. I believe the editor has for years advised beekeepers to get their comb honey on the market *early*. Had our western brothers paid heed to this advice their comb would have been consumed long ago, and before it changed to building material; but, no—they must hold for a higher price, not letting it go when wanted, then dump it on to our poor innocent eastern buyers, some of whom have been badly singed. No doubt some of our western brothers are chuckling because able to put one over on the eastern dealers; but surely it will prove a boomerang. When visiting a dealer recently I remarked about a nice pile of comb honey.

"Yes," he said; "sells well; most of it has been sold several times."

He meant that it *had* been sold as stated but he well knew it would be returned. He commented on the fact that they are getting to raising a great many beets out west. Ten cases of such stock sold by a retailer might lose him 240 customers, and at best could not do otherwise than give his customers a bad idea as to the quality of goods he handled.

If the surmises are correct in this matter, *here* is another body blow to the extracted-honey producer. Any one can sell good comb honey, but not so extracted. My personal experience required four years to build up a trade worthy the name. The backlotter will soon become discouraged, and finally close out his extracted at the best offer he can get; and be assured this will have a tendency to lower prices obtained by those who *have* a trade established.

The remarks regarding potatoes reminds me of an incident occurring many years ago. Potatoes sold as low as 12½ cts. a bushel, and thousands were never sold at all. The growers became discouraged and disgusted. That spring my grandfather, who had the name of being a shrewd, close-fisted old fellow (who would skin a flea for its hide) kept his own counsel and planted 60 acres. When others discovered what he was about it was too late for them to plant. He had a good crop, and sold none for less than 75 cts., and many at 80 and 85, making him more clean money than he ever made in one year before. My opinion is that it is a mistake for anybody, properly prepared to produce comb, to change—decidedly so for any Michigan or other beekeeper who can produce good comb honey. Such stock will always bring more than extracted per pound. I can name plenty of merchants who will not carry extracted, and who, if they have any of this "western building material" in stock, have become so disgusted they will handle neither extracted nor comb.

Formerly I have bought hundreds of empty cases (two cans in a case) from the National Biscuit Co. at 15 to 20 cts. per case. I believe they once used many cars of honey. Now I am informed they are using a much cheaper substitute. If all other bakers use the same, this of itself would have a very depressing effect on the price of extracted honey. It would seem a word to the wise should be sufficient; but will it? No. Many will make the change who really do not know why.

Birmingham, Mich. A. W. Smith.

Safe Methods of Shipping Comb Honey

Comb honey is one of the hardest commodities to ship, especially in small lots. We often have a customer at a distance who would like a case or two of nice comb honey; but the fact that it is almost impossible to get it thru without considerable loss has been discouraging in shipping such small orders.

FROM THE FIELD OF EXPERIENCE

As I am in the poultry business I have a quantity of egg-cases on hand at all times; and during the honey season eggs, being scarce so that my customers can not ordinarily have a whole case anyway, I push the sale of honey along with the eggs. I pack 28 sections in one side of a regular 30-dozen egg-crate. The box then contains 15 dozen eggs and 28 sections of honey. Or, if desired, honey can be packed on both sides, making 56 sections to a case. Sometimes I pack one side with comb honey, and the other with pails of extracted honey; or honey on one side and fruit on the other, according to the specifications given in order.

When packing the honey I take all the fillers and cardboards out of the case, leaving the excelsior in the bottom, and on top of this put a cardboard. Then I begin putting the honey in the case, close against the division-board. Two rows will go side by side, leaving about an inch of space all around. Seven sections will go in each row. On top of the first layer I put a heavy paper or cardboard cut the exact size of the two rows below, and put another tier on top. I put two or more cardboards against the ends of the sections and pack the space between these and the side of the case with excelsior, making sure to ram it down very hard—the harder the better, so that there will be no opportunity for the sections to chuck around. There must always be enough cardboard between the ends of the sections and the excelsior so the sections will not be damaged in packing. The sides are packed in the same way.

On top of the sections there is about two inches of space, therefore I lay on a cardboard after having folded down the ends which extend above the edge of the sections, then fill up the case with excelsior, making sure that this comes a little above the top of the case, so that, when the cover is nailed on, there can be no looseness or chance for the sections to chuck up and down.

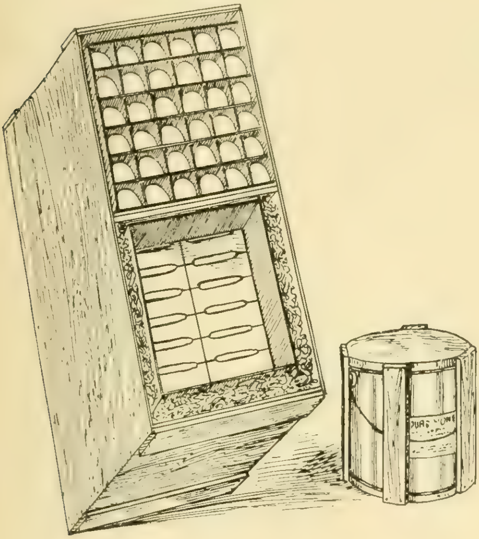
I have used this plan of shipping for four years, having shipped comb honey as far as Tennessee, and the report is always the same—that the honey is received in fine condition. The secret of success lies in the thoro packing and in the use of the egg-crates, which will always be right side up and handled with care. An egg-case usually receives better treatment than ordinary express. Honey weighs just about the same as eggs, so the case will be well balanced, even tho eggs are on one side and honey on

Geo. Dodds, Cambridge, N. Y., the man who ships honey and eggs in the same crate.

FROM THE FIELD OF EXPERIENCE

the other. If necessary, the case may be cut in two for shipping only 28 sections alone, just as we do when we ship 15 dozen eggs.

Honey may be sent in this way in winter as well as in summer; for if it is thoroly warmed when it starts it will go thru all night, since express is kept reasonably warm, and not subject to freezing temperature. Clean cases and cardboard should always be used, and the effect will be just as good as tho a regular comb-honey shipping-case were used with a glass front.



The illustration also shows my method of crating five and ten pound pails that are sent by parcel post. The octagon heads are made just a trifle larger than the diameter of the pail. Then slats of 3/8 material are nailed on, four or eight sides, according to the distance sent. I have sent out many pails with only four slats as shown in the illustration, and have never had a complaint. However, I usually put the slats on eight sides when shipping by express or by parcel post further than the second zone. If pine or basswood lumber is used the five-pound pail will weigh crated only 6½ pounds, which goes as seven pounds, and costs seven cents in the second zone.

Ten-pound pails weigh twelve pounds crated, and cost sixteen cents in the second zone. With slats on eight sides the package usually weighs another pound and costs a cent more postage.

Many times I have an order for two pails of the same size. These I crate together by making the heads long enough for both.

If the material is dressed a little it makes a better appearance, and appearances count for a good deal in the bee business.

Cambridge, N. Y. George Dodds.

Store-Box Winter-Cases

I now have twenty-seven colonies packed in leaves for winter. My plan is inexpensive, and I believe it is very satisfactory. From empty store-boxes I made for each hive two sides of a winter case, 14 by 26 inches, also two ends, 14 by 20 inches. These I nailed together without top or bottom, and tacked waterproof paper clear around. On setting such a case over the hive there is a space on each side and end of three inches, and four inches on top. To prevent the leaves falling out at the bottom I nailed strips of lath across the ends of the case and laid other strips on top of them across the sides. Two pieces of lath the proper length laid side by side just fill the space nicely and allow the case to rest upon the edges of the bottom-board in front, and on a support at the back consisting of a couple of nails driven into the end of the bottom-board.

I packed the leaves between the outer case and hive, and over the top of the hive; then for a cover I used heavy waterproof paper held on by strips of lath tacked on to the ends and sides.

Not counting my own labor, the cost for the twenty-seven hives did not exceed $3.00.

Wauseon, Ohio. Dr. A. P. Betts.

Great Strides in Tennessee

Glancing over the Directory of Country Life Officials in Tennessee, I am greatly impressed with the great strides this entire section has made in recent years along agricultural lines. Utterly devastated and impoverished fifty-two years ago, it took a long hard pull under new strange economic conditions to get somewhat "on its feet" again; but now see. Practically abreast of the states of other sections that had no such tragic experience to recover from, we have a Commissioner of Agriculture who counts among his staff a State Veterinarian, a State Chemist, a State Entomologist, Feed and Fertilizer Inspectors, and a State Apiary Inspector. There are specialists in

FROM THE FIELD OF EXPERIENCE

CORN CLUB
BEE CLUB

One evidence of the advancement of apiculture in Tennessee.

agronomy, animal husbandry, dairy husbandry, poultry husbandry, market and rural organization, home economics, home sanitation, and beekeeping. In addition to other courses in agriculture, there is a special course in beekeeping at our State University. In forty-four counties of Tennessee there are County Demonstration Agents working under three district agents.

The physical advantages of this section for apiculture have long been recognized. As Prof. G. M. Bentley, the State Entomologist, says of Tennessee, in one of his bulletins, "The varied flora, the abundant rainfall, the number of growing days, and the mild winters are all important factors pointing toward success to him who will keep strong bees of the right kind in a modern way." And that is the kind of bees the beekeepers of this state are learning to keep, and the way they are learning to keep them.

Here in Tennessee, too, we have, father and son, one of the largest queen-rearing establishments in the world (when quite by ourselves we quietly call it *the* largest), and in Georgia is one of the largest honey-producers in the country, with a string of some fifty or more apiaries. When we thus take stock of our advantages, and our progress to date, we are inspired to give a long pull and a strong pull and a pull all together toward wider enlightenment and further progress.

These conditions hold also in the adjoining states. There are tomato clubs, poultry clubs, corn clubs, pig clubs, and now there are bee clubs too, all over this southeast. Notice the picture of the parade in Winston-Salem, North Carolina, with the bee club right in line. Forsythe County, North Carolina, by the way, is a sure enough live county; and if by their counties ye shall know them, then is County Farm Demonstrator Bruce Anderson a live demonstrator. These particular combined agricultural clubs have a rousing song, with a stanza for each club, including the bee club, of course, and then they all come in together on a zipping chorus.

Nashville, Tenn. Grace Allen.

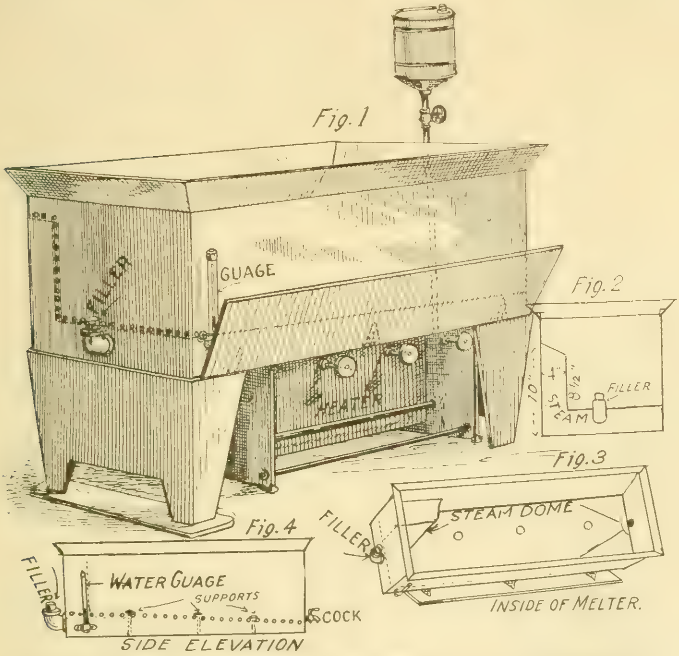
The Ira D. Bartlett Capping-melter

Among the many first-class beekeepers in Michigan is Ira D. Bartlett, of East Jordan. During the winter of 1915 I met Mr. Bartlett at the Grand Rapids convention, and it did not take me very long to come to the conclusion that he had something of value in connection with a capping-melter. From all the information that I have been able to glean in connection with these machines I have supposed, perhaps wrongly, that when the honey is uncapped and the cappings dropped into the melter, the honey is not of quite as good flavor as if it had not been

FROM THE FIELD OF EXPERIENCE

heated. In fact, I was well nigh convinced that no machine could be built which would deliver the goods of proper quality.

Mr. Bartlett very kindly gave me the specifications necessary to build a machine, and he also sent me a sample of the honey after leaving the melter. Before going into a description of the melter let me say that those of us who tested the samples came to the conclusion that there was no difference in flavor, but that the honey which had passed thru the melter possessed a little better body—no doubt due to the heat applied to it.



The Ira D. Bartlett capping-melter as used by R. F. Holtermann.

HOW THE QUALITY IS PRESERVED.

Right here it is well to say that this fine quality of honey can be obtained only by one person uncapping at a time and seeing that the melting and melted wax slides down the incline and passes out of the opening. If one operator uncaps in front of another the freshly deposited cappings dam back the melted wax and heated honey, and scorching takes place. Then the melted wax has to be liberated with a stick by shoving the solid matter to one side; but even at that the quality of the honey has no material influence if all are mixed together in the large tank.

I have no hesitation in pronouncing the machine first-class in every respect. Moreover, we generated sufficient steam from the water in the tank, below the bottom upon which the cappings are deposited, so that two steam honey-knives could be operated from that source. Let me caution any one undertaking this kind of work that, if the only outlet for the steam is thru a steam-pipe and honey-knife, the beekeeper should be very careful not to blow up the machine.

In the accompanying illustrations the only part which requires any explanation is the filler. This is merely the opening thru which the water is put in. The gauge is to show the quantity of water the machine contains. In Fig. 2 a compartment is shown into which the steam rises, and which has attached to it an outlet for the same. We use this steam for the steam honey-knife.

Fig. 3 gives another view of the melter. All parts of the bottom slope toward the outlet; and as the mass slides forward on the heated bottom it passes out in a melted condition; then the wax and honey are separated in the usual way—viz., by means of a boiler with a partition in it, all the liquid running into the first part and then under a partition which reaches almost to the bottom of the boiler; this partition keeps the wax in the larger compartment.

The board at the side of the tank, attached by three hinges, is to prevent danger from fire for the worker, and it is raised to the position in the engraving when the fire underneath needs attention.

R. F. Holtermann.

Brantford, Ont., Canada.

* * *

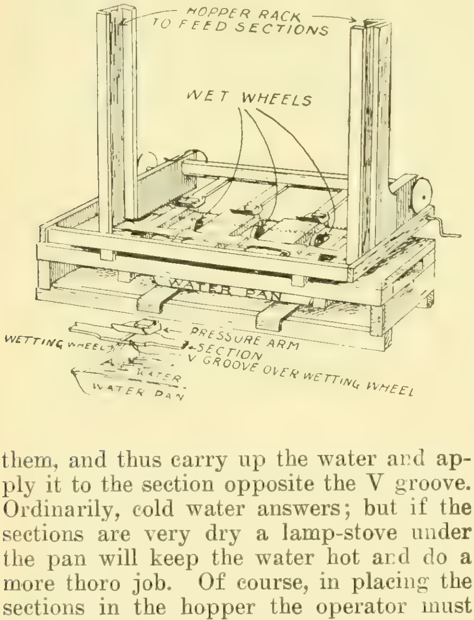
My bees are wintering out of doors in long-row tenement cases packed with dry leaves, with flax-board mats over the brood-frames. Twelve inches of leaves are placed on top of the mats. The space at the ends and sides of the hives is four inches.

Elroy, Wis., Dec. 16. Chas. Sheldon.

FROM THE FIELD OF EXPERIENCE

A Machine for Dampening Sections

The illustration shows my section-moistener. The section lies in the bottom of the "hopper," which holds about 100. When the little crank, shown at the right, is turned, the sections are pushed, one at a time, over the three small wheels the lower sides of which are immersed in a small pan of water. The wheels have a rim or "tire" of cloth, felt, or some other absorbent material which will carry plenty of water. The little spring paddles hold the sections down on the wheels sufficiently to cause them to turn as the sections are pushed over them, and thus carry up the water and apply it to the section opposite the V groove. Ordinarily, cold water answers; but if the sections are very dry a lamp-stove under the pan will keep the water hot and do a more thoro job. Of course, in placing the sections in the hopper the operator must notice that they all lie grooved side up. This is quite easy, as I notice that the sections usually all lie one way in the boxes. After being placed in the hopper the 100 sections can be dampened in one-half to three-fourths of a minute. However, I notice that the young man who usually folds my sections has got in the habit of seating himself in front of the folder with the moistener on the table within easy reach, wetting 25 or 30 sections, and folding them before wetting another batch, as he says they generally fold better when freshly moistened. By adjusting one end of the hopper, and the wheels, which are fastened on the shaft with set-screws, sections of any size could be accommodated.



Almont, Mich. Arthur Rattray.

Coercion vs. Education

On page 1118, Dec. 1, Wesley Foster takes me to task for a remark which I made to the editor, which the editor quoted in an editorial in the June 15th issue.

Mr. Foster did not state what the quotation was. Here is the essential part:

> "I have come to the conclusion that we need in Ohio and everywhere else a campaign of education. Foul brood is scattered all over the state. Many beekeepers are careless and indifferent, and so, of course, they eliminate themselves in time, but they leave behind them sources of infection. There are beekeepers of another class who are inclined to defy authority if the strong arm of the law is brought to bear to compel them to clean up. In that case they may or may not make trouble by scattering the disease out of pure revenge."

This remark was made in the course of a general conversation which I had with the editor in his office. I do not believe that all inspection work should be dropped, nor that we should work only along educational lines; as a matter of fact I support nearly all Mr. Foster said except that part of his article in which he places me in a wrong position.

This is a subject on which there are all kinds of opinions. I believe conditions must be much different in Colorado than in our section, for Mr. Foster says, "Stock inspection, dairy inspection, fruit inspection, have been carried on so thoroly that the farmers are not opposed to inspection work." On the opposite page Mr. Scott, of Indiana, in an article on educating the careless beekeeper, says, "But as a rule the man with a few colonies resents inspection and regards the procedure as an intrusion on his rights."

I have visited hundreds of beekeepers when on inspection work, and I believe Mr. Scott is more nearly right. The beekeeper may not object much; but nevertheless he resents the work. But, as a rule, after the inspector has convinced the beekeeper of his good intentions future visits are welcomed.

I feel certain that the great value of inspection work is along educational lines. It seems that the man who is doing the teaching must have the power to force the beekeeper to accept the education. We in Ohio are working much along educational lines. Whenever possible, when doing work in a district we get all the beekeepers together and give an actual demonstration of the treatment of disease, transferring, etc.

For years we have had educational exhibits at our State Fair, and at as many county fairs as we could attend. This last season we started with the beginning of the fairs in August, and attended fairs each week until the end in November. At the State Fair, Inspector D. H. Morris and myself gave a continuous performance in live-bee handling. We started about 8 A. M. each morning, and handled those bees continuously all day. As was to be expected, we had a crowd all day. We did not attempt to give a regular talk, but tried to answer what questions were asked, frequently explaining that we were there for educational purposes.

We were in doubt as to whether we could make one colony hold out the entire week. Editor Root told us some time before that he would not advise us to use one colony too long, because the bees would "get on to our game." Well, he was right. The last of the week we had to play pretty carefully for the bees were getting well acquainted with the proceedings. Our exhibits at the county fairs consisted of observation hives and all the smaller articles used in bee culture, including combs to demonstrate the value of the use of foundation. We also carried a large number of photographs showing good and bad methods. The state of Ohio spent thousands of dollars doing educational work at county fairs.

Our assessors at the last appraisement listed over 700,000 colonies, and no one can tell how many they missed. It is rare when we go thru a county one year that we are able to get back in that county the next season; and we all know that, if one has much disease, it is very seldom that one cleaning-up will get all the infection. The beekeeper must be taught so that he will be able to do his own inspection work. A. C. Ames.

Peninsula, Ohio.

Bees working on a substitute for pollen.—Photographed by D. M. Bryant, Ethelfelts, Va.

STRAY STRAWS

Dr. C. C. Miller

A. I. Root, do you want to make a lot of us mad by telling about that controversy with the express people, p. 216, and then not giving us the outcome?

C. Stimson, p. 61, gives a valuable item as to the value of minerals in honey. Beekeepers need stirring up about it, and then it should get into all periodicals aside from bee journals.

Sometimes you have one or more combs heavy with pollen, and hardly know what is the best disposal. Try distributing them in your extracting-supers and see how nicely the pollen will gradually disappear.

"After two weeks it" [the nurse-bee] "takes up the duties of a regular field-bee," p. 208. Is that "two weeks" given as a round number without giving the exact number of days, or has it been concluded that the orthodox "16 days" is too long?

Mary says, p. 116, that the aimless discussion in women's clubs can't compare with a beekeepers' convention. Well, Mary, do you women have subjects so full of interesting by-paths, ever alluring from the main track? Anyway, I'd like to hear a convention of beekeepers, all women, if they can talk as well as you, that is, provided you talk as interestingly as you write.

G. M. Doolittle, p. 116, says a rent in a veil pinned and puckered into a protuberance will be attacked by bees because fuzzy. Yes, bees dislike fuzzy things; but that protuberance is also blacker than the rest of the veil, as you will see in a photo of it. I've seen bees for hours following the glass head of a hat-pin on my assistant. Was it because the glass ball was black or fuzzy?

F. Whiteside says that for 20 years he has kept his bees successfully, packed in clamps containing 8 hives each, 4 hives in a close row, and another row, back to back. They are packed in dry sawdust, cedar or pine, all the year round. To handle the inside hives he must stand in front of the entrance, but he likes it better than to have fewer hives together. It certainly seems less labor.

Mrs. Allen, p. 195, reports unusually severe freezing, and says: "An examination on January 30, when the bees had a good flight, showed less brood in packed hives than in unpacked." That might be because greater heat was generated by the bees in the center of the brood-nest in the unpacked hives, the greater generation of heat being due to the greater cold surrounding the brood-nest; for the greater the cold surrounding the brood-nest the more the bees stir up the fire inside, just as in our houses the greater the cold the bigger fires we keep.

"During early spring," says J. E. Crane, p. 126, "$1\frac{3}{8}$ might be best, but later $1\frac{1}{2}$ is quite as good or even better," for spacing. Early spring is the time when greatest heat is needed. Isn't it just possible that $1\frac{3}{8}$ is too close to allow enough bees to keep up the heat? There's a nut for Dr. Phillips to crack.

"A colony of bees can produce only about half as much comb honey as they could of extracted," p. 206. The general teaching has been two-thirds as much comb as extracted, and I think the "half-as-much" idea comes from Canada. I'm more inclined to the old belief, altho I'd rather believe the new; but is there not some way that we can have some definite knowledge about it? The puzzle might be referred to a certain Dr. Phillips.

P. C. Chadwick, p. 194, your enterprising 13-hour search did not prove that bees mix pollen on the same trip. Neither did it prove that they do not. I saw one bee do the trick. (Didn't take me 13 minutes.) But I think that was the only time in my life, and I suspect it is a very rare occurrence. I doubt that a bee ever mixes two kinds of pollen if *either* of the plants is in considerable quantity. But in what we call a dearth a bee is so anxious for nectar that it may visit plants of different kinds on the same trip.

R. F. Holtermann, page 105, says: "If the beekeeper is isolated from other bees so that there is a range of, say, two miles in every direction, and if he is in a good locality, I doubt whether it pays to split up an apiary of 200 colonies." Like enough he's right, but I wish we could *know*. Even if he's right, there remains the question whether there might not be more money in 190 or some smaller number. Remember, too, that, to give him control of "two miles in every direction," there must be no bees within four miles. Such places "in a good locality"—I wonder if there's one within a thousand miles of here.

SIFTINGS

J. E. Crane

Does the delicate delightful aroma of foundation come from the wax, or is it the result of the wax first coming in contact with honey and the brood-chamber, and absorbing the odor from them?

* * *

We occasionally have calls for dark honey, but not one year in twenty do we have any to supply the demand.

* * *

"Extracting too closely is worse than disease," says P. C. Chadwick, page 51, and who shall say he is not right?

* * *

I can not tell how much I should like to attend those magnificent conventions in the West; but they are too far away for one of my years.

* * *

It takes a bale of cotton and a barrel of alcohol to fire one of those big 16-inch guns, we are told. Alcohol is at home when engaged in destroying human life.

* * *

There appears to be a shortage this year of extracted honey; but the slow freights are quite as great a bother here in the East. Glass shipped us over five weeks ago from Ohio has not yet arrived.

* * *

One of the things we learn from the hive in that mammoth greenhouse is the value of meal for bees that are without pollen, page 200, March. We learn also that, while meal is good and helpful, pollen is better where it can be furnished.

* * *

Somehow it makes one feel better to read P. C. Chadwick's statement that his bees go three miles and more for orange honey than to be told that bees will starve unless flowers are within a mile of an apiary. Page 125, February.

* * *

It is March 2—sunny but cold. Our bees have not had a chance to fly to any extent for nearly four months, and I have just been out and lifted the cushions from three or four hives and find them strong and warm. It may be another month before they can fly.

* * *

I like the idea of wintering in two-story Langstroth hives. One great difficulty with all frame hives has been to get bees to move across the frames during cold weather. With a two-story hive bees can cluster in the center and move across combs, above the lower ones and below the upper ones, without difficulty, making an ideal brood-nest.

* * *

With expert beekeepers in Tennessee and North Carolina advocating double-walled hives we may feel quite sure there can be no mistake about our using them here in the North. The warmer that bees can be made out of doors here, the better—little danger of overdoing it.

* * *

On page 171 the editor inquires as to the honey yield of alfalfa here in the East. I have seen bees working on it near here very freely in two different seasons and I am hoping that, when the ground is well filled with bacteria, and properly limed, we shall get a good deal of honey from it.

* * *

E. G. Carr, foul-brood inspector for New Jersey, makes it a part of his business as inspector to "inspect the man" as well as the bees, page 91, February—a capital idea. If the inspector could have strong men for beekeepers he would soon have strong colonies, and foul brood would vanish like dew before the sun.

* * *

E. G. Baldwin informs us, page 50, that along the east coast of Florida the beekeepers were getting a super or more per colony from basswood. Now, I say that isn't fair. It seems to me they ought to be satisfied with orange, palmetto, tupelo, pennyroyal, partridge pea, and the rest, and leave clover and basswood for us here in the North.

* * *

On page 1115, Dec. 1, Geo. H. Rea tells how to solve our greatest beekeeping problem. It is good; and if the advice given for solving the greatest beekeeping problem is followed it will not only solve the problem of the ignorant and careless beekeepers, but some other problems of even more importance. It seems strange that mankind cannot learn that the exercise of kindness and unselfish helpfulness is the best way to deal with the problems of evil that are all about us. I believe Mr. Rea's appointment as a government expert for the South is a wise choice.

OUR FOOD PAGE

Stancy Puerden

HOW do you like the title of the page? The managing editor christened it after my first contribution was turned in. I like it. The pronoun gives me a chance to shift part of the responsibility to the shoulders of the readers—the feminine shoulders, I mean.

Permit me a few words as to the purpose of "Our" page. It is my aim to make it helpful in the selection and preparation of seasonable foods, in the planning of reasonably well-balanced and attractive menus; to encourage economy of money spent for foods, and time spent in their preparation; and, last, to promote the use of honey, not as an occasional luxury, but as a daily necessity on our tables.

How I wish Gleanings had a nice fashionable page, say ten by fourteen inches! When we get well under way the editor is going to have his troubles keeping us from trespassing all over the next page. Honestly, there is hardly a more important subject for wives and mothers to study than the selection and cooking of foods. Dr. Wiley has said, "With a good cook in every household, and preferably not a hired one, the divorce mills of the country might as well shut up; they would have nothing more to do." He has also said that, while there is no country in the world which has so much good food in proportion to its population, there are few countries where so large a proportion of it is spoiled in the kitchen before it reaches the table. I prophesy that this severe criticism of American housewives will not be true ten or fifteen years from now. Domestic science, as taught in the public schools, and the increasing interest in it, shown by the number of excellent magazines devoted to the subject, are lifting household management to a science, and cooking to an art.

In these days of soaring food prices, menu planning is very important. Our children need protein, fats, carbohydrates, ash, and bulk in their food just as much as ever; but it takes most careful planning and study of food values to accomplish a balanced ration, and have sufficient left out of the average income for other living expenses.

When one Puerden is interested in a subject the whole family are sure to know about it sooner or later, generally immediately. Our big boy is very much interested in chemistry; our small boy is studying agriculture; the man of the house is devoted to promoting the sale of honey, and the writer is reading every thing she can find on food values. You would be surprised to see how nearly these subjects are related, and how much we can help each other. When one has children of school age there is no excuse for rust accumulating on one's mental machinery.

This month I am giving you a luncheon or dinner menu which has been tested by the Puerden family and met with unanimous approval. The stew is easy to prepare, requires little time for cooking, and is an appetizing way of using left-over bits of meat. The salad is simple, as it should be when the rest of the meal is hearty, and it adds variety. The muffins take the place of bread, and, with the honey, supply all the dessert necessary. You will notice the muffin recipe calls for no sugar or honey. Here is where I differ with Mr. W. L. Porter. In his excellent paper, as reported on page 212, he said, "A tablespoonful of honey in the muffins for breakfast decidedly improves them." Don't you believe it. Bake your muffins without any sweet in them, and let the natural and delicious flavor of the grain be developed. Then serve honey with them; and instead of a tablespoonful, half a pound will disappear. Just try it.

In the following recipes level measurements were used.

DINNER.

Whole-meal stew; lettuce with French dressing; corn-meal muffins; comb honey; cheese.

WHOLE MEAL STEW.

Half a cup salt pork or bacon cut fine; 2 cups cold meat cut small; 2 cups onions cut small; 3 cups sliced cold boiled potatoes; 2 cups canned corn; 1 cup canned tomatoes; 1 teaspoonful honey; 1 teaspoonful Worcestershire sauce; salt to taste.

Put a layer of the pork or bacon in the pot, then a layer of any kind of cold lean meat; next a layer of onions, then a layer of potatoes, and on top a layer of corn. Simmer slowly about an hour, after adding hot water or stock, and then turn in the tomatoes sweetened slightly with the honey. Season to taste, with salt and Worcestershire sauce.

CORN-MEAL MUFFINS.

Two eggs; 1½ cups milk; 1 1-3 cups flour; 1 1-3 cups corn meal; 5 teaspoonfuls baking-powder; 1 teaspoonful salt; 2 tablespoonfuls shortening.

Beat the eggs well; add the milk, then the flour, corn-meal, baking-powder, and salt sifted together. Add the shortening melted, and beat well. Bake quickly in hot, well-oiled muffin-pans.

Our Neighbors' Fields

By E. G. Baldwin

"I DOTE on metal covers." C. E. Morgan, in *Western Honey Bee.* [So do we. —E. G. B.]

* * *

"Two sizes of frames in a beeyard is a nuisance."—J. E. Crane, in *Domestic Beekeeper.*

* * *

"Honey will clarify and evaporate much more rapidly in a shallow tank. Less metal is required in the manufacture. Your cover can be made of matched ceiling or other light wood."—Editor Bixby, in *Western Honey Bee.*

* * *

"The best time of all to requeen is early in the spring."—F. M. Perry, Bradentown, Florida, in *American Bee Journal* [Good. But tell us where you get your young queens so early, friend Perry.—E. G. B.]

* * *

"If the small producer will continue to ruin the market by not giving the question [of marketing, E. G. B.] any thought, and just sell for what he can get, he is not deserving of the assistance of the expert producers."—Ira D. Bartlett, in *Domestic Beekeeper.*

* * *

"The beekeepers need a strong national organization. The present association has survived numerous storms that have threatened to wreck it, and it is to be hoped that under the leadership of Professor Jager it will profit by the mistakes of the past and gain a new lease of life."—Frank C. Pellett, in *American Bee Journal.*

* * *

"The colder the outside air, the smaller and warmer the cluster. The warmer the outside air, the larger the cluster, till the air outside is 57 degrees, when. presto! change! there is no cluster, the bees are scattered all thru the hive, and summer has come to the bees. This will happen on any warm day in the winter. A few hours of warmth will do it."—C. E. Fowler, in *American Bee Journal.* [Wonder if this is not the reason we find bees flying in the winter any time the temperature rises to about 57 degrees. The moment the cluster breaks up, out come the bees.—E. G. B.]

* * *

Floyd Markham, in the *Domestic Beekeeper*, says: All colonies run for comb honey were reduced to nine frames, and a division-board put in on each side, when the first super was put on. I believe this open passage at each side of the brood-nest has something to do with getting the honey at the sides of the super [that is, getting the bees to store honey in the outside rows of sections.—E. G. B.] Another reason is that this passage, about half an inch wide, reaching from floor to cover, even when the supers are tiered up on the hive, affords better ventilation in hot weather." [Why not combine the two ideas?—E. G. B.]

* * *

"When we remember that not more than one beekeeper in five ever takes or reads a bee-journal of any kind, we need not be surprised at the ignorance that broods over the beekeeping world."—J. E. Crane, in *Domestic Beekeeper.*

KINK FOR KEEPING BOTTOMS OF SECTIONS CLEAN.

"We have found a honey-board to cover the entire surface of the brood-chamber, with no entrance thru it, but two slots on each side for the bees to carry the honey up into the super an advantage. This board covers all the center of the brood-chamber, where bits of dirty wax are liable to be carried up and mixed with the cappings of the sections, and injure their appearance. It should not be put on till work in sections has well begun, after which it does not seem to keep bees from storing in the sections."—J. E. Crane, in *Domestic Beekeeper.**

STATE EXPERIMENT APIARY IN TEXAS.

"Mr. B. Youngblood, director of the Experiment Station, has signified his intention to provide, in his forthcoming estimates of needed appropriations, for the establishment of an experimental apiary for the study of practical beekeeping methods in Texas. . . . It is not contemplated to compete in any way with the work of Dr. Phillips at Washington; we do not want to do the same class of work that is carried on there. What we want in Texas is practical work."—E. G. LeStourgeon, in *Bee Item.* [Every state should have its own experimental apiary, and station as well. There are local conditions, local needs, local questions that only a home station can handle. Every state is, in a way, a law unto itself. We shall welcome the day when every state in the Union not only contemplates but *has* its own apiary and yards.—E. G. B.]

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* See page 190, February number.

AROUND THE OFFICE

M.-A.-O.

THERE are indications-a-plenty that honey is more and more coming into favor with the cook. A letter received at the Home of the Honeybees from Paris, date of Jan. 30, signed I. Curtise, says: "Have just seen an advertisement of your cook-book of 100 recipes for things in which honey can be used instead of sugar. As sugar is now increasingly difficult to get in France I should be grateful to you if you would take the trouble to send me your book." An aeronaut, H. C. Davis, of East Orange, N. J., has recently written to ask for an Airline honey cook-book, saying "it is to supplant my wife's Orthodox Presbyterian Cook-book, used for 18 years and now worn out—so am I, almost—and so she has decided to try a new style on me." The flyer adds that his wife may find a recipe in the book that will cause him to "soar to heights unknown." What does that last mean?

* * *

Hermann Rauchfuss and son, Frank, of Denver, Colo., were visitors at the office recently, and mighty welcome they were. If they don't know something about the bee and honey business, nobody does. Mr. Hermann Rauchfuss is a booster for Caucasians, but he would not introduce them where pure Italians have already been introduced. He tells of a strain of Caucasians that he once owned that were practically as gentle and stingless as flies. He admits, however, that they gather a good deal of propolis. The son, Frank Rauchfuss, managed one rather large yard, giving to it less than one day a week thruout the last season, but secured an average of 150 pounds of comb honey per colony. That is "going some" for a comb-honey outyard.

* * *

You'll be kicked if you do, and be kicked if you don't, is just another way of saying it—so that it doesn't sound quite so bad. To get down to what we are driving at: GLEANINGS requires its advertisers of bees and queens to answer satisfactorily a list of questions as to qualification to produce properly what they wish to advertise, and ability to fill orders promptly for the same. This procedure is taken solely to protect GLEANINGS' readers against poor stock and delayed delivery. Every reputable queen and bee rearer is glad to give such information to publishers of their advertisements. But there are others. One such showed up on the GLEANINGS landscape this month, displaying all the symptoms of an irritated hornet. Here are some of his stings: "Every queen-breeder you Roots can keep from advertising, you have one less competitor;" "I know as much as you or any of your tribe about the bee business;" "I suppose when you advertise Airline honey the advertisers quizzed you down to know that your bees did not suck any sugar-barrel lids or gather any bug-juice before they took your ad;" "I expect to take this matter up with Dr. Phillips and the postal authorities to know your limits to refuse me advertising space," etc. Hit 'em again. Yea, verily, you'll be kicked if you do, and you'll be kicked if you don't.

* * *

It has always been reported—and generally accepted as a fact—that it was a high and merry time "when Belshazzar the king made a great feast to a thousand of his lords," and himself led off in lapping up the wine and embracing the ladies present. But that was a "picked-up" supper after a long ride in the rain compared with the time last week in the office when it was *announced* finally and at last and for *sure* that the new A B C and X Y Z of Bee Culture was all printed and being bound. The sales department and GLEANINGS' subscription department didn't go Belshazzar one or two better, on the strength of this news, only because they didn't know how. They felt like Belshazzaring all right enough. Any way, let's shake hands all round on the completion of the 1917 edition of the A B C.

* * *

Here's a pretty fairly good one, as good ones go nowadays. A sure-enough beginner recently wrote a beekeepers' supply company in Ohio that he was contemplating buying a colony of bees from a man who had been running for extracted honey only, and added: "Now what I would like to know sure is, will the bees that he has been using for extracted be all right for me to use for comb honey?" The sales manager's clerk, who didn't care much about his job, as appeared from subsequent events, replied as follows: "Just detach their extractors and they will soon get over the habit." The Man-Around-The-Office would have never, never fired that clerk. I would have advanced his pay and made him head foolkiller of all beedom.

GLEANED BY ASKING

E. R. Root

A. C. K., Illinois.—How can I determine when a colony has or has had dysentery?

A. In early spring, when the bees have their first flight there will be more or less spotting of the hives, even with healthy colonies. That is to say, the bees will in flight cast small drops of a light yellow liquid excreta. Unless these spots are of a very dark-brown or black color they do not indicate anything abnormal—certainly not dysentery; but if the front of the hives is badly smeared up with dark-brown or black spots, and particularly if the inside of the hive has its combs smeared over with ill-smelling dark-brown or blackish excreta, about half or two-thirds of the bees dead, and the rest listless, it may be concluded that it is a bad case of dysentery, and that there is probably no hope.

A colony may have a slight attack of dysentery affecting a few individual bees; but with the approach of warm weather it will soon recover itself.

B. C. C., Pennsylvania.—What is the cause of dysentery?

A. Bad food, insufficient protection, a small cluster in the fall, improper housing, or a severely cold winter. Any one of the conditions mentioned may cause dysentery; but usually it requires a combination of two or three. A good colony on bad food, well protected, will generally come thru the winter in good condition without dysentery. A small colony or nucleus, even when well packed, may have the disease, because the cluster is not large enough to keep up bodily heat in a severely cold part of the winter in spite of protection. Bad food, unripened honey, or honey-dew may cause dysentery when all other conditions are as they should be. A very prolonged and severely cold winter, with the mercury below zero most of the time, may cause a good many well-housed colonies in the apiary to show dysentery before spring; but such winters fortunately are few and far between.

Dysentery will be caused by having the house cellar too warm with insufficient ventilation. It may be caused, likewise, by the opposite condition of the cellar—too cold. A temperature of 50 degrees Fahr., with a large amount of ventilation in the cellar, will usually insure against dysentery, provided, of course, the colony is not too weak or the stores bad. Even then, if temperature and ventilation are right, there may, and probably will be, no trouble.

W. Z. K., New York.—What is spring dwindling?

A. This can hardly be called a disease, but, rather, a gradual reduction in the strength of a very weak cluster of bees to start on. Improper housing or improper food may start dysentery. In either case, the colony, in an effort to keep warm, becomes too active, and consumes too heavily of its stores, with the result that many bees, in their distress from retained feces, rush out of the hive in cold weather and die. This constant depletion in numbers continues until not over a handful will be left surrounding the queen. Sometimes spring dwindling is accompanied by no signs of dysentery but a gradual dying-off of the bees, due to the fact that the colony went into winter quarters with too many old bees, and these, continuing to die off, leave but a mere handful by spring.

Uniting small clusters with other small clusters does but little good. However, a bunch of bees on a frame of brood placed in the upper story of a strong colony may build up into a nice colony. See Alexander plan in A B C and X Y Z of Bee Culture.

N. A. C., Ohio.—Nearly every spring my neighbors complain that my bees are visiting the cow-stables, and driving the cattle out of the barn. What can I do to prevent this?

A. There is not much that one can do to stop it. However, the presence of a large amount of pollen the previous fall in combs placed outside of the brood-nest, will go a long way toward its prevention. Placing cotton-seed meal or rye meal in trays in the apiary will sometimes act as a counter-attraction. Get the bees started with a little syrup or sweetened water. The trays should be placed in a sheltered spot in the sunshine, when the bees will visit it on warm days. If you can get them started in the first place on these trays of meal they will not bother the neighbors' stables.

J. K. M., Iowa.—How soon can I unpack my bees in the spring?

A. Better leave the packing on too long than to take if off too soon. Leave it on until settled warm weather comes on. The outer cases sometimes have to be removed in order to make it possible to put on upper stories with a large amount of extra room; but when a colony is able to take an upper story, no harm will be done by removing the outside packing-case.

L. S. V. Indiana.—How many combs of stores ought a colony to have in early spring to carry them thru until the honey-flow?

A. They cannot very well have too much. There usually will not be more than two or three combs of sealed stores. In the center of the brood-nest most of the food will be eaten out, and in its place will be brood. A colony that is "rich in stores," as Doolittle says, will rear more brood than one that is short of them; hence it is very important to have the brood-nest well supplied. If there is only a comb or two of honey in the brood-nest, two or three extra combs of sealed honey should replace the empty combs; but they should be put on the outside—not in the center. If one does not have a supply of extra combs of honey he may feed thick sugar syrup, or give a block of hard candy. Cubes of loaf sugar placed in a shallow tray moistened with water answer very well as a temporary substitute. There is nothing better than combs of sealed stores containing if possible some pollen; and the apiarist should always have a reserve of them to use in the spring.

H. A. R., Tennessee.—My combs are heavily loaded with pollen. How can I remove it?

A. Do not remove it. They are the best stock in trade you can have. Next to sealed stores there is no more valuable asset for bees in early spring than combs of pollen. Sometimes we would give more for a few combs of pollen than we would for sealed stores. Pollen-combs may be worth in the early spring one or two dollars each.

D. A. B., Vermont.—Should I commence spreading brood in the brood-nest by May 1?

A. We advise against it. Usually the queen will enlarge the circle of egg-laying as fast as the bees can take care of it. An empty comb placed in the center of the brood-nest, unless it is during a period of settled warm weather, does more harm than good. If the queen fails to lay properly, pinch her head and put a good one in her place; or unite the colony with some weak one that has a good queen.

R. C. A., Minnesota.—A large number of my colonies are weak. Should I unite these, or should I secure pound packages from the South to build them up?

A. We advise getting the bees from the South. Be sure you buy of a good breeder—one who will guarantee that the sugar out of which the candy is made has been boiled 20 minutes in a closed vessel.

Avoid buying bees of those who quote the lowest price. We have had numerous complaints against those who sold at low prices, and who contended that they could not afford to replace loss in shipments on account of the low price at which they sold the bees. No matter what the price is, there should be an understanding that all losses will be replaced promptly by the shipper by sending more bees or returning the value in cash. As a general rule those who have advertised for some years may be depended on to render service and quality.

H. S. T., Minnesota.—Can bees be moved during winter?

A. Yes, very easily. If there is snow on the ground and sleighing is good there is no better time for moving bees. A little snow thrown over the entrances to close them will prevent the escape of the bees, when the hives can be loaded on to the sled. There is no danger of suffocation, because the snow will melt long before any trouble of that kind can occur. We have moved bees from outyards in mid-winter, and put them in the cellar and had the colonies come out in the spring in fine condition.

C. H. G., Wisconsin.—In building up my colonies, those that are below par, I am at a loss to know whether I should unite two weak ones or a weak one with a strong one.

A. A good deal will depend on conditions. Where two weak ones are side by side, the stronger one can be moved to a position about midway between where the other stood and its neighbor united with it. All flying bees will then unite at one stand.

In the case of where two of the colonies to be united are in remote parts of the apiary, we would build up the stronger at the expense of the weaker by taking from the latter a frame of sealed brood and giving it to the stronger. Continue this practice until the weak one has exhausted all its brood, and then take all the bees and carry them to the other stand.

W. O. M., Provo, Utah.—1. If a colony has its queen taken from them, or should she be killed, can the colony rear a new queen from the eggs left in the worker cells?

2. If a queen should be introduced where there is a laying worker, what would be the result—would the queen be accepted and the worker stop laying?

A. 1. If the colony is queenless the bees will raise another one, providing there are eggs or larvae in the hive.

2. If the laying queen were introduced in a hive where there were laying workers, there is a strong probability that the queen would be killed, altho queens may be introduced some times and the laying workers will disappear. The best way to treat a colony of laying workers is to give them a ripe queen-cell from a good colony. It is not wise to take chances on a good laying queen.

A. D., Colorado.—My colonies of bees are very strong about November. I have a great number of dead ones before the entrance of the hives. Would you advise me if they are weak in spring with plenty of stores to give a young queen for building up the colonies?

A. If any colonies are weak in the spring the giving of young queens might not and probably would not do any good. If the colony is queenless, of course giving them a queen would be the thing to do. The better thing is to unite these weak colonies with other weak ones, especially a queenless one with one that has a queen.

Of course a young queen is as a rule better than an old one. If a colony is weak because the queen is failing, a young or another queen should be given.

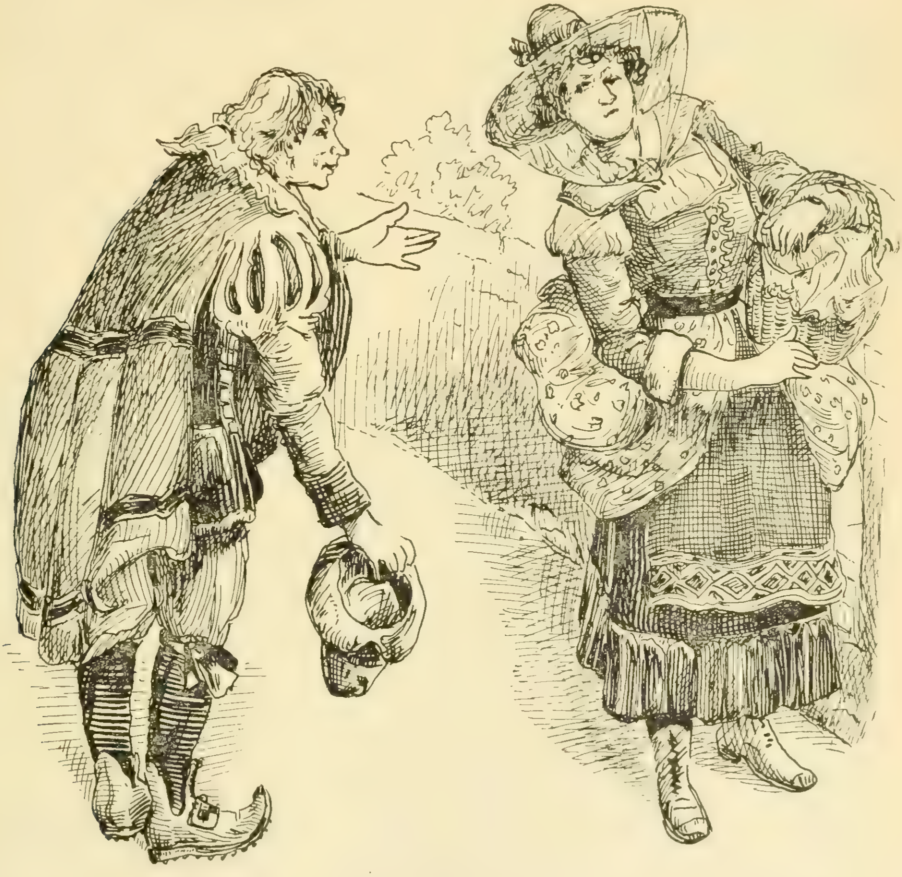
J. A. C., Michigan.—Is it possible to have a colony too strong in the spring?

A. Yes. A colony just boiling over with bees is inclined to swarm just at the beginning of the honey-flow. It is advisable to pull it down some by removing from them a frame of hatching brood, and giving it to a colony that is a little below par.

Mother Bee NURSERY RHYMES

By M.G.P. (Mother Goose Plagiarized.)

"Where are you going, my pretty maid?"
I'm going to the beeyard, Sir," she said,
"May I go with you, my pretty maid?"
"If you'll lift the hives, kind sir," she said.



"What is your fortune, my pretty maid?"
My bees are my fortune, Sir," she said.
"Then I shall marry you," my pretty maid!"
"You'll be stung if you do, kind Sir," she said."

(He certainly will be—if the artist got her face right.—Editor.)

A part of the "apiary" located above the wires some twelve feet from the ground.

CAN THIS BE DONE?

The First Few Queens Were Not Mated, but Indications are Good for the Final Success of the Plan

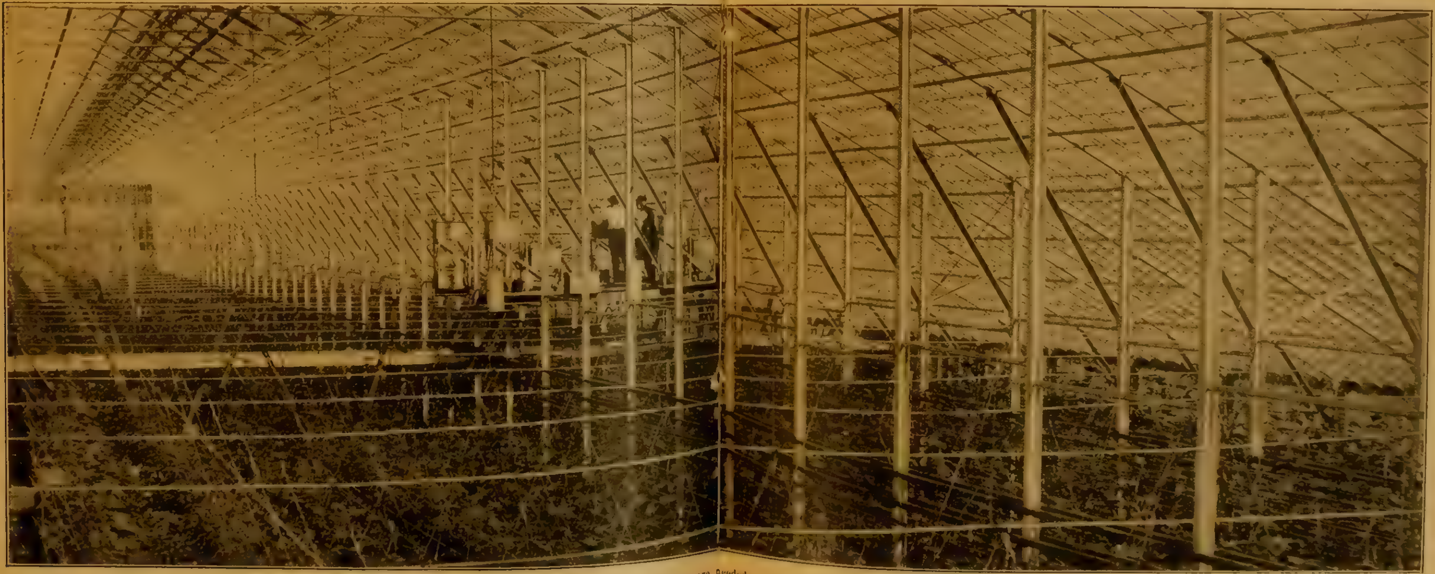
By the Editors

We had hoped to begin the report this month of the great mating experiment by saying, "This can be done;" but we shall have to postpone making any positive statement one way or the other until the next issue.

As outlined in the last number, nuclei with drones and drone brood were received from the South about the first of April. Contrary to our expectations, not only the drones that were hatched in the greenhouse, but also the mature drones in the nuclei when they were received, flew naturally, returning to their own hives without difficulty. They have now been flying freely for more than three weeks, and, so far as we are able to determine, the mortality is no greater than it would be out of doors, in spite of the braces and wires. At any rate, there are hundreds of great noisy drones buzzing contentedly about that indoor acre of cucumbers. To be sure, the first day or two they bumped against the glass somewhat; but they soon stopped this and behaved even better than we had anticipated. During these first few days quite a good many helpless fellows were to be seen struggling in the dust of the paths, but most of these were found to be defective in wing or leg, due to the probable chilling of the brood *en route* from the South.

The first queens were raised from cells started in the queenless nuclei on the way from the South. Undoubtedly the cells were chilled, for the virgins that hatched in due time were quite small, and some of them had defective wings. They took flights, however, as unconcernedly as tho there were no glass between them and the blue sky. In one instance, while we were watching an excited virgin on the comb, she suddenly took wing. Watching closely at the entrance of the hive we saw her come back a few moments later and enter, thus proving conclusively that she must have flown before and marked the entrance to her own hive. None of these first queens have begun laying. Several disappeared, and one we found dead on the floor-board. Whether they were structurally imperfect, as seems probable, or whether they failed to mate and return, we cannot say. So far all we know is that both the drones and queens fly normally.

Looking down between two of the rows of cucumber vines growing seven to nine feet high.



General view in the large building during the height of the cucumber season. Several colonies are needed to insure perfect pollination of the blossoms. The central part of the building about thirty feet wide and over six hundred feet long is practically unobstructed by posts or wires, and yet the drones may be killed off pretty rapidly by striking posts or wires at the sides.

JUST NEWS

Editors

ANOTHER new organization, a state society, is the Rhode Island Beekeepers' Association, which was organized at Providence, February 21. Frequent meetings are to be held, probably at the lecture room of the Providence Public Library. The president is Arthur C. Miller; secretary, Gardner B. Willis.

* * *

PUTTING BEES INTO MOVIES.

Prof. George A. Coleman, of the University of California, has started an elaborate plan for putting bees into the movies. He has already gotten out a film for the Department of Extension of Agriculture, at the University, of more than 1500 feet, illustrating the manipulation of bees. This was so well received that he believes the time has come when bee culture in all its branches should be shown in additional films.

As there is considerable expense connected with a work of this kind he proposes a co-operative plan by which all extension departments, beekeepers' associations, and chambers of commerce or individuals interested may obtain copies of the films at a cost just a trifle above the actual cost of making the prints.

The educational value of these films will be tremendous, especially in schools, churches, and commercial organizations. Professor Coleman has prepared a very elaborate scenario on bees and beekeeping, full particulars of which can be obtained by addressing him at room 6, Agricultural Hall, University of California.

* * *

THE FIRST MEETING OF THE UNITED HONEY-PRODUCERS' ASSOCIATION AT MADISON, WIS.

The first meeting of the United Honey-producers' Association was held at Madison, Wis., Feb. 6-8. In the absence of the president, Mr. Kindig (who has resigned), the meeting was called to order by Mr. Hassinger, vice-president, of Madison. The secretary's report showed that the membership has grown from nothing up to 225.

A committee was appointed to confer with a similar committee from the National Beekeepers' Association to decide on a way to co-ordinate the work of the two organizations. This committee consisted of President Bixby, of New York; Secretary G. W. Williams, of Indiana, and Vice-president W. D. Wright, of New York.

A committee was appointed to extend the educational work, already begun in schools, into normal schools, colleges, and universities thruout the country. The meeting then adjourned and met again Feb. 8. This meeting was called to order by Vice-president D. C. Polhemus, of Colorado.

The following officers and directors were elected: President, Geo. J. Brown, California; Vice-president, Wheeler D. Wright, New York; Secretary-Treasurer, Geo. W. Williams, Indiana. Directors: R. B. Davis, Staunton, Ind.; E.W. Aeppler, Madison, Wis.; Miss Iona Fowls, Oberlin, Ohio; Allen Latham, Norwich, Ct.; P. J. Lucas, Topeka, Kan.

The auditing committee failed to agree on a satisfactory report, but were instructed to examine the vouchers and bills which were not present, and to prepare a complete report for the next meeting.

* * *

THE SPENCER APIARIES COMPANY—R. M. SPENCER.

It will be remembered that several complaints have been lodged against the Spencer Apiaries Co., doing business at Nordhoff, and later at Ventura, Cal., in furnishing bees and queens in package form. After an investigation we concluded that Mr. Spencer was not dishonest but unfortunate on account of the poor season, and that he would make good to his customers. See Gleanings for March, 1916, page 216. Later on, more complaints came in, and we took the matter up with Mr. Spencer again. We told him we should have to lay the facts before the public, and his replies were peculiar. These complaints finally became so numerous that they were laid before the Postoffice Department. It now develops that the poor man is insane, which fact explains some of his letters. See the following from the Postoffice Department, Division of San Francisco.

> *Sir:*—Believing the following will be of interest to you I submit the information herewith, contained in a letter from the postmaster at Ventura, Cal., under date of February 5, 1917:
>
> "Referring to recent complaints forwarded to your office against R. M. Spencer and Spencer Apiaries Company, of this city and Nordhoff, Cal., I wish to state that, before the Superior Court of this county on February 3, said R. M. Spencer was adjudged insane and committed to the State Hospital at Agnew, California."
>
> C. D. Lowe, Postoffice Inspector,
>
> Los Angeles, Cal., Feb. 10, 1917.

BEEKEEPING STATISTICS IN MINNESOTA.

From the last circular of the Apiary Department of the Minnesota University Farm, the winter loss for 1915-16 in Minnesota is given as 10.2 per cent—668 colonies out of 6508. Beekeepers owning over 100 colonies had a loss of 9.5 per cent while those owning less than 100 colonies reported 10.6 per cent loss; 37.7 per cent of the Minnesota beekeepers are farmers. The greatest problem in wintering is the supplying of winter stores.

Of the beekeepers that reported, 5 per cent were subscribers to one, two, three, or four bee journals. Only 16 per cent were members of some beekeepers' organization; 42.7 per cent owned Italian bees.

* * *

BEES ON COMBS BARRED FROM ONTARIO.

Shippers of hives of bees should be notified that bees in hives or in nuclei containing combs, if shipped to Ontario, Canada, will be quarantined at the port of entry for a period of not more than nine months. If such bees are found to be infected they shall be destroyed. Bees in pound packages without combs are exempt from this detention provided they are accompanied by a satisfactory certificate from a state or provincial inspector declaring them to be free from disease at the point of shipment.

* * *

DEATH OF D. C. POLHEMUS.

The editorial staff is very sorry to learn of the death of D. C. Polhemus, on Feb. 13, as announced by Wesley Foster in his department, beekeeping among the Rockies, in this issue. For one who was so largely engaged in the business—one who probably knew more about handling bees in a large way than most beekeepers—he was exceedingly modest. A member of our staff met him on his way to the Madison convention, where he was elected vice-president and chairman of the Industrial Committee. At that time, while he did not seem to be strong he gave no indication that death was so near.

Mr. Polhemus would have made a good vice-president as well as chairman of the Industrial Committee of the National had he lived. He will be missed in more ways than one.

* * *

DEATH OF EDWARD BERTRAND.

Edward Bertrand, the veteran editor of the Swiss bee journal entitled *Bulletin d'Apiculture,* later published under the name of *Revue Internationale d'Apiculture,* died on the 17th of January in his 85th year. Mr. Bertrand was widely known all over the world. It was he who translated Dadant's Langstroth Revised into French. His influence was widely distributed thruout Europe. He leaves a wife with whom he had lived for 51 years.

* * *

DEATH OF J. VANDEVORT.

Mr. J. Vandevort, of Laceyville, Pa., died on the 10th of February last. In the early 80's Mr. Vandevort made foundation-mills, and very good ones too.

* * *

WINTER LOSSES.

Reports are beginning to show that in most localities of the United States bees have been apparently wintering well. But there are some exceptions. In the Northwest, Minnesota, the Dakotas, Colorado, Montana, and in parts of Idaho, there appears to be some mortality. Some losses have been reported from Pennsylvania. The severe freeze in some of the southern states, particularly in Alabama, Georgia, and Florida, has been hard on the bees and the brood. It has killed off the pollen and honey bearing plants in some of the localities, and this will make it difficult for bees to breed up properly.

Those beekeepers who are furnishing bees in pound packages, and who may be located in districts where the frost was severe, may be handicapped in filling their orders.

* * *

LATEST REPORTS ON BEE CONDITIONS AND PROSPECTS FOR 1917.

Below we print special correspondence on bee conditions and present prospects in various parts of the country. We asked our correspondents to report on how bees have wintered, condition of colonies and amount of stores, condition of clover and other honey-producing plants, weather conditions and rainfall. Here is a summary of the replies received up to March 20:

Redlands, Calif., March 16.

Winter loss normal; conditions fair to good; condition of honey plants good; colonies progressing nicely; some shortage of stores; season cold and backward with not sufficient rain to insure crop; bees advancing about with season; more good rain will insure crop; buyers contracting from 7½c down. —P. C. Chadwick.

Portland, Ore., March 16.

Bees wintered well; loss light; clover conditions, etc., never better; winter mild tho prolonged; colonies strong; stores plenty; at various times been flying for weeks; weather still cool, later than 1916; rainfall thirteen inches short; prospects never better; 1916 surplus still unsold; indications tend to more extracted than comb. Portland Seed Co.

San Jose, Calif., March 17.

Bees have wintered very poorly, owing to coldest winter ever known here; great deal of stores candied; season over two months late; rainfall a little below normal, but sage and everything now looking good; fruit trees in bloom will be at their best March 25. —J. E. Wing.

Parawan, Utah, March 16.

Bees have wintered poorly, honey-producing plants best in years; coldest weather in eighteen years; plenty of snow; colonies have consumed a great amount of stores; average prospects for 1917 best in years; all honey sold at high prices.—M. L. Skogard.

Idaho Falls, Ida., March 16.

Long hard winter; too early to estimate results; anticipate heavy winter losses on account of heavy snow and long winter; alfalfa and sweet-clover should be excellent; long winter and heaviest snowfall in 20 years; expect large demand for bees in pound packages to build colonies this spring.—Idaho Honey Producers' Association.

Hansen, Ida., March 16.

There will be a loss of 50 per cent in bees all over Twin Falls district. It is snowing today. We have had the worst winter I ever saw anywhere, and the bees had much honey-dew for winter stores too.—C. C. Matthews.

Denver, Colo., March 16.

Bees wintering below normal; alfalfa and sweet clover in fine condition; strength of colonies weakened by severe winter; stores short; heavy losses reported from Idaho and western Colorado on account of honey-dew; abundant snowfall in mountains; precipitation above normal; quite a number planning to fill empty hives with package bees.—Wesley Foster.

Grand Junction, Colo., March 16.

Winter loss probably 10 to 15 per cent above normal; condition of honey-plants good; colonies probably weaker than normal, but with plenty of stores; winter has been severe with a favorable amount of snow.—J. A. Green.

College Station, Tex., March 16.

Bees wintered much better than usual; horsemint will be short; catsclaw and huajilla may be short, but mesquite will be good; bees are in good condition now; winter and spring has been dry; more interest being taken in beekeeping than ever before; honey market is cleaned.—F. B. Paddock, State Entomologist.

Augusta, Kans., March 15.

Kansas and Oklahoma bees wintering best in years, now in strong condition and stores good; rains this week make outlook for clovers good, but winter has been very dry; very little cold; judging from this date, outlook is best in years for a big year in honey and bees.—Carl F. Buck.

Stillwater, Okla., March 4.

Bees have wintered fine; lost five per cent; colonies strong; plenty of stores; prospects for alfalfa and sweet clover good; season as to weather about normal.—F. W. Vandemark.

Sioux City, Iowa, March 16.

It is still winter and the condition of bees wintered outside is not known; the few reports that come in vary widely from total losses to good wintering; estimate the loss to be 50 per cent on outside wintering; bees went into winter quarters heavy with stores as a rule; but owing to continued low temperature in this locality the consumption of food has consequently been abnormal; bees in cellars are in good condition; clover prospects good; moisture abundant but not in excess.—W. R. Southworth.

Nashville, Tenn., March 16.

Bees seem to have wintered excellently; crimson and red clover seem badly damaged, but white clover, our main dependence, looks promising; condition of colonies normal; pollen-gatherers are at work; fruit bloom is on time and sufficient, stores will be all right; rainfall ample; winter has been severe and trying, but spring seems opening up satisfactorily.—Grace Allen.

Savannah, Ga., March 17

Expecting a good crop this year despite the big frost and freeze of some weeks ago.—L. W. Crovatt.

Springfield, Ill., March 15.

Bees have wintered very well; cold has been quite severe, but with intervals warm enough for them to get to their food, and less frequently, had several good flights; clover condition uncertain yet but hopeful; strength of the colonies and amount of stores is more than 100 per cent of an average condition; weather has been uncommonly dry all winter, with very little snow, and only one or two light showers, and that did not get into the ground because of the frost; have 18 acres of sweet-clover pasture that is fine.—Jas. A. Stone.

Platteville, Wis., March 15.

Too early to know how bees have wintered; cellar bees are fine; those outside report bees spotting hives badly; some dead; condition of clover fine; condition of colonies uncertain; good winter stores; but one day since Oct. 24 bees could fly; long steady cold; bees wintered well in cellars so far; where plenty of good winter stores and protected, outside should winter fair at least. A report a month later will tell better for Wisconsin. Ground is white with snow yet; cold nights; plenty of ice.—N. E. France.

Hammond, Ind., March 13.

Bees in cellar wintering perfectly; clover looked fairly good last fall but not so much of it as the year before; weather dry till March 13 when we had good rains; it will be hard to tell much about the bees till they are out of the cellar.—John C. Bull.

Middlebury, Vt., March 15.

Too early in this section to report with much certainty of the wintering of bees; so far as observed, appear to have wintered fairly well; have not had a chance for flight for over four months; clover should winter well, as the ground has been covered with snow for over three months with little ice on ground; weather conditions appear favorable. —J. E. Crane.

Lansing, Mich., March 16.

In central Michigan winter losses probably 50 per cent; have had steady cold weather thru March with exception of moderate weather for a day or so; losses in many cases not due to lack of stores, but too cold to move over; U. S. Weather Bureau here reports rainfall one-half normal, and temperature for January to March below normal; condition of clover uncertain as it had not advanced as much as usual last fall owing to dry weather.—Elmore M. Hunt.

Syracuse, N. Y., March 16.

Bees in cellar wintering nicely; outdoors, 20 per cent loss; colonies well supplied with stores; beekeepers expect a good crop; the weather for the last two months has been cold, and no flights of bees outdoors; this month, so far, no flight, and weather has been cold but not much snow.—F. A. Salisbury.

Markham, Ont., March 15.

Too early to make a forecast for Ontario. Remarkably steady cold winter, and bees have not had a cleansing flight; hardly had a day warm enough to let them change clustering spaces; weaker colonies show signs of dysentery; would say that if we get a warm day inside of a week or ten days, the bulk of colonies will be all right; but unless we get a warm day soon, something is liable to happen; cellar winterers report their bees to be very quiet—in fact, the season has been ideal for indoor wintering; snowfall has been light here, but snow has been with us continuously since last November, and at this date alsike-fields have a light covering yet; alsike is all right yet; critical time to come when snow goes; other sections of the Province have had a heavy fall of snow.—J. L. Byer.

Deland, Fla., March 17.

Bees wintered well; pennyroyal, altho thought to be badly hurt by the cold, yielded fairly well; orange now probably fair, but owing to the cold as far south as 28th parallel there may be only partial crop; south of that, possible late in April or May will give a slight surplus; mangrove badly damaged but too early to predict regarding it; main sources for table honey are scrub and cabbage palmetto now full of flowers; colonies strong but have consumed stores rapidly on account of warm weather; weather fine now, rainfall below average; general outlook for surplus promising.—E. G. Baldwin.

Liverpool, Pa., March 15.

Bees have wintered well so far, and per cent of winter loss is small; clovers had a good stand last fall and were well covered with snow; rainfall has been abundant; bees are fairly strong and have plenty of stores; everything thus far is in favor of the beekeeper.—H. C. Klinger.

Falmouth, Ky., March 15.

Winter losses about 15 per cent; sweet clover and aster in excellent condition, white clover poor; moisture excessive; colonies strong.—Virgil Weaver.

BEGINNERS' LESSONS

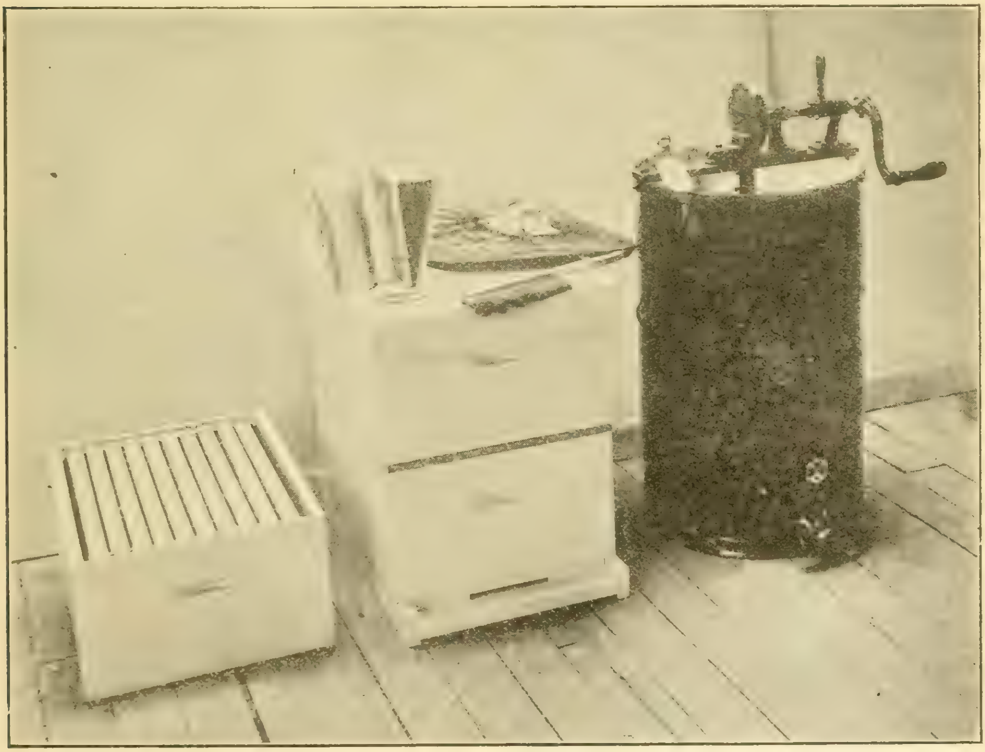
H. H. Root

LESSON NO. 3.—THE FIRST EQUIPMENT.

IN Lesson No. 1 we took up in detail the different parts of the hive. In Lesson No. 2 we had several glimpses into the mysterious interior of the hive proper, examined the building of the comb, the storing of the pollen and the honey, and the rearing of the brood. In this Lesson it is proper, especially at this time of the year, to consider what kind of outfit the prospective beekeeper, the "new" beginner, should have.

Most beginners wish to produce comb honey. Some authorities advise it, in fact, but there is little or no reason for this aside from the inadequate excuse that the production of comb honey requires no honey-extractor—that is, the machine for whirling the combs and throwing the honey out by the centrifugal force thus created. It is a fact, to which any experienced beekeeper will testify, that extracted-honey production requires far less skill than successful comb-honey production. There are several reasons for this. Bees do not produce honey in the small section honey-boxes as readily as they do in the larger combs, simply because the small combs, divided up as they are, and separated from each other, are somewhat contrary to nature. Now, because bees do not as readily enter these comb-honey supers, it is more difficult to keep them from swarming and thus dividing their forces at a time when only by united action can a large amount of surplus honey be produced.

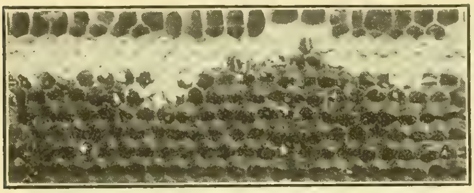
Then a colony to produce a paying crop of comb honey must be brought to the very acme of strength just at the time the honey-



An outfit for a beginner who expects to produce extracted honey:

1 ten-frame hive body, wired frames with sheets of comb foundation.
2 ten-frame supers identical with hive body.
1 floor-board.
1 inner cover.
1 outer cover.
1 two-frame honey-extractor.
1 bee-brush.
1 uncapping-knife.
1 No. 2 bee-veil.
1 bee-smoker.
1 hive-tool.
1 pair bee-gloves (if desired).

flow starts. Too often, under the management of a beginner, a colony will swarm before getting well started in the comb-honey supers.



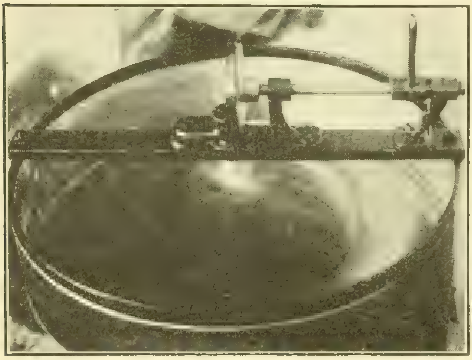
Cappings sliced off leaving the dripping honey exposed ready to be extracted.

An abundance of room, which is one of the great preventives of swarming, can not be given to colonies run for the production of comb honey, otherwise there are likely to be a good many unfinished sections. In fact, successful comb-honey production requires contentment in spite of the often crowded and almost unnatural surroundings.

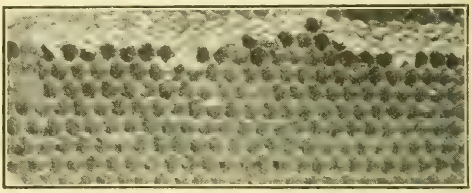
Not all seasons are conducive to comb-honey production. The best comb honey is produced in a short time during a quick, bountiful honey-flow. Bees run for comb honey need careful attention at the right time. A beginner in choosing to produce comb honey has to begin very nearly at the top of the ladder. Comb-honey production is, or ought to be, the business of a specialist —at least of an experienced beekeeper.

EXTRACTED-HONEY EQUIPMENT SIMPLE.

Aside from the cost of the honey-extractor itself, the first cost of an extracted-honey equipment is practically the same as the cost of the comb-honey outfit. About the only difference is in the choice of supers. While the extracted-honey man may, if he chooses, use shallow supers, not much deeper than ordinary comb-honey supers, the majority use full-depth supers identical with the brood - chambers. This in itself is a long step toward simplicity, the frames surrounding the extracting-combs being identical, usually, with the frames of the brood-chamber below. And here is an important point that many beginners overlook—the subsequent expense for the equipment is much less in case of extracted-honey production where the combs are used over and over again year after year. In comb-honey production the small section boxes have to be bought new every time, of course, as they are sold with the honey.



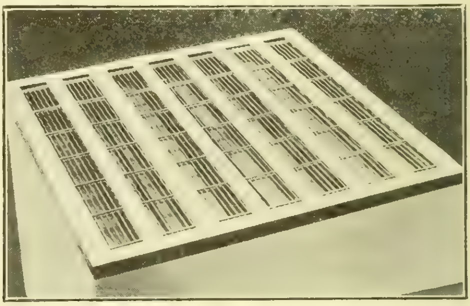
In the extractor the combs are whirled rapidly. The centrifugal force throws the honey out against the side of the can.



The empty comb after being extracted may be put back again and refilled by the bees.

Small-sized extractors for a moderate beginning (and all beginnings with bees ought to be moderate), can be purchased at a price not exceeding $12.00 to $15.00. Two or three extra supers are needed per colony; for while it is possible, it is unwise to work from hand to mouth, with one super only.

About the only other device used in the apiary that the comb-honey producer does not need is the queen-excluder, a framework with wires located 163-1000 of an inch apart. The worker bees can pass thru these readily, but the queen cannot. Most queens will not enter comb-honey sections to lay eggs; but, unless prevented by a queen-excluder, they are likely to enter extracting-supers.



A queen-excluder between the brood-chamber and the supers keeps the queen from going above and laying eggs in the extracting-combs.

In Lesson 4 we shall consider the actual start—how to get the bees, the first work to be done, and something concerning the details of extracting honey.

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

MARCH 3.—I have just returned from making a hasty visit to all five apiaries here in the home district. The day was calm and bright, but not nearly warm enough for bees to fly. Bees were stirred up a little on Dec. 8th last, if I remember correctly, and have been held in snug with the cold ever since.

Judging by external conditions, bees are in fair shape altho signs of dysentery were noticed in a few colonies in each yard. Much depends on whether a good day comes soon for bees to fly. With such a day inside of two or three weeks, prospects are for fair wintering at least.

* * *

While we have experienced winters with more excessively cold days, for steady cold weather this winter promises to be a record-breaker. Official temperatures for Toronto for February, just past, give a mean temperature for the month of 16.3 degrees, which is 5.9 degrees below normal, and the statement is further made that it has been the coldest February in 25 years.

A light snowfall has exposed hives to the cold all winter, and at present, March 3, the fields have but a thin covering of snow and ice. For the sake of the alsike clover, a good snowfall that would lie still and not get drifted into piles would be welcomed. But March does not usually act that way, for when it snows, generally it *blows* as well.

* * *

THE CROP COMMITTEE'S PRICES.

On page 89 for February we are told that some beekeepers in Ontario were grumbling because our price or crop committee did not set higher prices this year. No doubt about that at all, but as grumbling and fault-finding is a prerogative common to all members of the genus homo, of course certain beekeepers are not in any way exempt. Dollars to doughnuts, these same kickers were the first ones to kick in the fall of 1913 because they then said that this same committee had recommended *too high* a price, and some even had the audacity to claim that members of the committee deliberately did this so that they could unload early and let the rest suffer. It is always easy to be in the "I told you class" after things have matured; and if prices rather slumped in the fall of 1913 and went the other way this last season, naturally they "knew how it would go." The worst feature in connection with matters of this kind is that such advice always comes when it is too late to be of any use. Constructive criticism is always in order, while destructive criticism is worse than nothing.

The crop committee, while it no doubt has made mistakes, has after all been the means of saving thousands of dollars to the beekeepers, and the members of the committee have worked for nothing and boarded themselves—let us be decent with them anyway. Needless to add, the writer of these notes is not a member of this committee nor associated with them in any way aside from being a member in common with the rest of them, of the O. B. K. A.

* * *

Alighting-boards or other projections under the entrances of winter cases are an abomination. A number of winter cases purchased last fall have two-inch-wide projections under the entrance hole, and today, when visiting the apiary where these cases are, we found half a dozen colonies with the entrances pretty well clogged with ice. A week or ten days ago we had a heavy rain for an hour or more followed by severe freezing weather—just the combination to make trouble with cases having projections as mentioned. Right in the same yard under similar conditions in other respects, not an entrance was bothered with ice where the case had a perfectly clear front and nothing to catch falling water under the entrance. Build winter cases with no alighting-boards under the entrances; incline the cases on stands so that they lean pretty well forward, and forget all troubles as to entrances getting clogged with ice.

* * *

Honey is still in keen demand with little to offer. Looks as tho next year's crop, if we should have one, will come on a clear market. The crop, in addition to being heavy in quantity last year, was away above the average in quality—the latter factor was no doubt a strong feature in helping to create the great demand that has existed for honey for the past few months.

* * *

It gives us northern fellows quite a shock to read on p. 195, March issue, that North Carolina expects a loss of 30 per cent of the bees because of a hard winter. My father has been spending a good deal of the winter in that state, and naturally I had a feeling that North Carolina was comparatively warm in the winter. But I also notice that "low stores" are mentioned. I wonder if the latter item is not more responsible than the cold weather.

* * *

That picture of the apiary in the forest, page 103, caught my eye, as it looks like one of our apiaries very much. But when I saw those high trees and then read of swarming and no queens clipped—well, to use a slang phrase "none for mine." How a man can run out-apiaries and not clip queens is a mystery to me, and I am sure if Mr. James tried the clipping plan he would not be willing to climb trees any more, which at best is a killing job on a hot day, and often dangerous to body or limb.

* * *

Just a word in regard to the editor's racy account of his rush visit, page 109, February. He speaks of the entrances of those big hives as being 1 by 3 inches. They are larger than that. As to strychnine being scattered around the yard, of course that means that the poison mixed with meal is placed in small tins in under tops of outside cases. Some more "explaining" may be in order when that article appears as referred to by the editor.

AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado

THE writer has to report the death of Mr. D. C. Polhemus, of Lamar, Colorado, Feb. 13, 1917, just three days after his return from Madison, Wisconsin. Little did we think death would claim our friend so suddenly, for, so far as we could tell, he would live for years. Mr. Polhemus was elected vice-president of the National Beekeepers' Association, and chairman of the Industrial Section. In January he was elected president of the Colorado State Beekeepers' Association. We have lost a man from whom we had hoped, and justly so, that great good would come to beekeeping thru his efforts. It will be very difficult to fill his place. He was a man of quiet dignity and sound judgment. Seldom have we had in our ranks so substantial a force as was he. He wasted neither his own time nor that of any one else with useless talk.

Mr. Polhemus was but fifty-six years of age, and had been engaged in bee culture for a little over twenty years, having become associated with Oliver Foster at Las Animas, Colo., in 1895. He decided to take up beekeeping and moved to Lamar, where he has since resided. He owned and operated over 2000 colonies of bees, and was a heavy buyer of comb and extracted honey for his trade in Kansas, Oklahoma, and Colorado.

Beekeepers who attended the National convention will be glad to know that Mr. Polhemus spent a very happy season there, and Mrs. Polhemus tells me he was very much pleased with the honor of the election as vice-president and chairman of the industrial section. He had begun planning the work for the coming year, and had hoped to aid the members in the purchase of honey-containers, and also had a few plans in mind for aiding beekeepers in marketing. Mr. Polhemus is survived by Mrs. Polhemus, and son Edgar, who was associated with his father under the name D. C. Polhemus and Son. The sympathy of all beekeepers goes to the wife and son in their sorrow.

THE HONEY-MARKETING SITUATION.

Extracted honey is in good demand, the sales running probably two to one for comb honey. However, comb honey will be pretty well cleaned up before the new crop is harvested. Prices on comb honey have not advanced recently to speak of; but sales have been better. The spring trade in comb honey promises to be very good; and if business conditions remain as they are now, the comb honey will be moved at a fair price.

Comb honey is offered at about $2.25 to $2.60 per case of 24 sections, according to grade and packing. The advance in the price of tin and glass containers has made it imperative that the price of package honey be advanced. Pint jars of extracted honey now retail at 30 to 35 cts. each, and one-pound glass jars retail at 25 cts. If one is not careful he will find that where honey is put up in 2½-lb., 5-lb., and 10-lb. cans the cost of the honey, cans, labels, freight, etc., will come to more than the selling price. We have to keep revising our prices to keep up with the advances.

THE WINTERING OF BEES.

Our winter has been a severe one—much more cold and wind than usual, and consequently we shall doubtless have heavier losses than common. In western Colorado there has been more severe weather than ever in the eastern part of the state. It is reported from the Grand Valley that nearly every morning for two months the mercury has hovered around zero. There is not the snow reported in the abundance we have on the Front Range, but doubtless there will be little if any lack of water for irrigation. Idaho reports heavy losses caused from honey-dew in the winter stores. Losses as high as forty per cent are expected, and one report gives a loss of twenty-nine colonies out of thirty.

IN TEXAS

By F. B. Paddock, State Entomologist

THE bees are building up very rapidly this spring. Some of the older beekeepers say they never saw drones flying so early in the spring. There is some little concern felt about possible cold weather that may come any time and severely injure the honey-plants, as was the case last year. The dry spell is already being noticed, for some of the early spring sources of nectar have been cut short. In the extreme southern section of the state the more progressive beekeepers fed some to hold the fine colonies that had built up early. In our section the horsemint is doing very nicely. The wild plum was in full bloom March 1.

* * *

Never before has there been such concerted action on the part of the beekeepers to secure beneficial legislation. Such efforts are certain to bring results. If not this time it will certainly two years hence. The greatest hindrance in such work is the extreme ignorance of the vast majority of the people regarding the importance of the beekeeping industry in the state. Along this line there recently appeared in one of the leading state papers a feature story in the magazine section of the Sunday edition. The plain facts brought forth in this article have caused many people to think the second time, and to conclude that perhaps there really is something to the beekeeping industry.

* * *

Mr. Kennith Hawkins, of the Bureau of Entomology and the State Relation Service, on March 1 completed a six-weeks' tour of Texas. Mr. Hawkins is in charge of apicultural extension work in the southern states. While in Texas Mr. Hawkins attended the sectional meetings of the farm-demonstration agents. Mr. Hawkins expects to return to Texas by April 1 to hold a series of beekeepers' field meets, in co-operation with the Extension Service of the Texas A. and M. College and the State Entomologist. These meets will be held in at least eight representative sections, under the auspices of the local beekeepers' associations and the county agents. Illustrated evening lectures will be given at each meeting. In addition to the program Mr. Hawkins will spend some time in studying conditions in each section. It is hoped that this extension work among the beekeepers will result in great good, and that it will be the forerunner of much more extensive work being done on the problem in the state. It is hard to conceive of the ignorance of a good many of the beekeepers. This lack of knowledge is one of the serious handicaps of the foul-brood-eradication work. There is great need in this state of extension work being done in beekeeping. It has been said repeatedly that the possibilities of the industry in this state have hardly been more than uncovered.

* * *

In one of the leading state papers, the following recently appeared: "The beekeepers who are complaining of the low price of honey should remember that they haven't done much advertising since Solomon's time." Food for thought. This is an age of advertising.

* * *

What is believed to be the first attempt of its kind has recently been inaugurated by one of the county associations. The members of the association have undertaken an educational campaign to eliminate the "bee-gum." Meetings are to be held in the rural schools, with two or three speakers on the program. A modern frame hive will serve as a basis for the instruction, with considerable emphasis put upon the increased returns possible from keeping bees under such conditions. The results of such a campaign will be noted with keen interest on the part of many over the state.

* * *

The honey market is cleaned up. There is less honey for sale now than in any of the six seasons past. There is no "carry-over" honey, so the early spring honey should command a good price. Extracted honey is quoted at 10 cents, but there is none offered, and comb honey is no longer quoted. It seems as tho there were more honey used this past winter than ever before. In view of what we know now, it is easy to say that there is no use of flooding the market again. But the beekeepers have learned their lesson. They have seen the folly of their ways. The Texas Honey Producers' Association will in the future exert a wonderful influence on the supply of honey on the market and the price secured for it.

* * *

The *Beekeepers' Item,* edited by Hon. Louis H. Scholl, is filling a long-felt want. Mr. Scholl is to be complimented on the quality of the matter contained in it. The paper is so good that a Texas beekeeper can not afford to be without it.

* * *

Light rains were quite general over the northern two-thirds of the state during the first days of March. The rain was followed by a cold wave. The temperature recorded in this section was 32 degrees. These sudden cold spells are trying to the bees.

* * *

In the northern part of the state many beekeepers are trying to increase the areas of sweet clover, which is said to do very well in the waste places. It is in this section that some beekeepers build up in the spring, using one queen in a hive of two brood-chambers. Just before the main honey-flow one hive-body is moved to a new stand and a queen is introduced. This method was mentioned on p. 56.

* * *

On March 5 the Ellis County Diversification and Marketing Association held its regular monthly meeting in Waxahachie. The program of this meeting was given over to bees, and many beekeepers of the county, not members of the association, were in attendance. A talk, " Bees on the Farm," was given by F. B. Paddock, State Entomologist, and this was followed by a very pointed talk by Mr. Tom Burleson, of Waxahachie, one of the foremost beekeepers of the state. The idea of the program was to get the farmers of the county to see the need and value of bees on the farm as a part of the general diversification scheme and the live-at-home campaign now being waged in the state. That the meeting had some immediate effect is evidenced by the fact that at least five members made inquiry of where bees were for sale.

* * *

In southwest Texas the prospects are very good now for an early crop of honey. Needless to say, this will bring a good price on a " cleaned-up " market.

* * *

From north Texas comes the report that the unusually heavy snow which came in that section in the early spring caused a little loss among the beekeepers. The snow drifted over the entrances and the bees smothered. Those colonies closest to the ground suffered the most.

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

AFTER all, Mr. Hawkins and his southern work did not have to stay discontinued. We are glad to hear he has recovered his health and is back at work again.

* * *

If I were a Dixie daffodil I believe I'd join the " Safety First " movement. They are such gaily reckless blossoms that they do often come to grief. This year they burst into bloom so early that even poor hurried February had a chance to enjoy them, and her last week here was beautiful indeed. During those warm daffodil days of February the bees were coming in loaded with pollen from the soft maples, and also taking advantage of the water-pan. Then came March, like neither a lamb nor a lion, but very much like a schoolboy with a grin that makes you suspicious. And on the fifth morning our daffodils were under 8 inches of snow, with some of our single-story hives showing not much but the covers, and the whole outside world standing at 14 degrees above zero.

* * *

There are two things I feel impelled to mention—yea, even three—in spite of the fact that they are not related in any particular way to beekeeping south of the line. One is the delightful page of " Mother Bee Nursery Rhymes," with the dear familiar lines done into such irresistible bee jingles and accompanied by such charmingly quaint pictures. Another is the new food page, with its delicious recipes and suggestions, and the promise of so many good things to come; and the third isn't even in GLEANINGS. It is a booklet containing the annual report of the state inspector of Iowa, Mr. Frank Pellett, and also the report of the Iowa state convention. It contains some unusually interesting papers on almost every angle of beekeeping, and is something the Iowa beekeepers may well be proud to have put out. I certainly appreciate having had an opportunity to see it.

* * *

Mr. Chadwick's remarks and inquiry, page 194, March, about watching bees work on flowers, reminds me of some of my more limited experiences, confined mostly to our own yard—fruit-bloom in spring and smartweed in mid-summer, after the oats die down in the rear chicken-lots. Then last fall I watched them in the althea blooms by the east steps, day after day, till the frost killed the blossoms. They seemed to be after nectar, paying no attention to the pollen, tho invariably they came out of the deep flowers all powdery on the head and back. Then came the clean-up, bewilderingly swift.

Is it true that bees sometimes "achieve" pollen, as it were, by gathering it for its own sake; and at other times, as seemed to be the case with the althea, have it "thrust upon them" and so collect it only incidentally, and as a secondary interest? And when brushing off the pollen that has clung to them uninvited, do they always pack it thriftily into the famous baskets, whether they need it or not, and carry it home?

* * *

In spite of all the extreme and variable weather of the winter, the bees in this immediate part of Tennessee seem to be coming thru with full, or practically full, colony count, tho it is as yet too early to judge of their strength. Today, March 7, every one of our colonies is flying. Mr. Bartholomew reports, however, that in many box-hive localities in the mountain districts this winter has completed the destructive work of the past few unfavorable years, almost wiping the bees out and in some places really doing so quite completely.

Not only has the severe winter been hard on the bees, but reports indicate that the clover crop may have been seriously damaged. Some of the press notices have stated that the damage to both wheat and clover is worse than at any time for thirty years, and that they are both practically killed out. I was talking with Commissioner of Agriculture Bryson this morning and he stated that, while the unofficial indications are that wheat has been damaged to the extent of 50 to 75 per cent, they have as yet no reports on clover. On his own farm, however, the old clover is killed, and he thinks it likely the loss thruout the state may be heavy. This, of course, refers chiefly to crimson and sweet clovers, white clover usually suffering less than the others from winter-killing. Anyway, we refuse to bury our hopes thus early, tho we admit feeling a bit solemncholy.

* * *

The honey or "sousing" method of introducing proves to have a surprising number of followers, either old or new. We should thank Prof. Baldwin for resurrecting and announcing it. The day may come when every queen will be either sprinkled or immersed. I'll tell you what I'm going to go when I try it—provided the queen has mated, of course. I'm just going to clip her wings then and there, and get that operation over at the same time. Since she is going to be so thoroly daubed with honey, the finger taint will surely be lost. Perhaps a splash of diluted honey at the time of the regular clipping of queens already established may keep them from the danger of getting balled; may be a genuine "sousing" will save one that is being balled.

* * *

I am interested in noticing how many women wear gloves in the beeyard. Until last summer I scorned them. But yielding at last to advice and urgent entreaty I got a pair and started wearing them early last season. Now I am in danger of contracting the habit, as much as anything for the satisfaction of not getting my hands all daubed up with propolis and stuff. But they are hot things, and awkward, and I don't like them a bit. I am convinced that, when you wear them, you need them lots more than when you don't, because the long wide finger ends disturb the bees so much more than deft bare fingertips.

* * *

APRIL-TIME IN DIXIE.

It's April-time in Dixie!
The world is full of song,
Trees are bright with blossoming,
Hearts are young and strong!
Fairy, elf, and pixie
Blow the hours along,
So April-time in Dixie
Doesn't last long!

Dixie bees are humming,
Skies are blue and gay,
Heart, take all that's coming
Each glad day.
Fairy, elf, and pixie
Blow the hours away,
And April-time in Dixie
Soon brings May!

FLORIDA SUNSHINE

E. G. Baldwin

Pennyroyal, too, has suffered by the freezing weather of early February. But with warm rains now it will bloom again — in fact, is blooming somewhat at this writing (February 15th). If the forest fires do not burn it off too much the crop may yet be appreciable from pennyroyal. It is rare indeed that the cold waves reach far enough south to touch that rather hardy plant. It had started blooming last October.

* * *

From later appearances it seems that the black mangrove of our eastern coast is badly damaged by the frost. Whether it will go "to the grounds" or only the tips of the branches be frozen is yet to be determined. It has taken it 22 years to attain even its height of the year 1916 (about 12 to 15 feet on an average, on its northern limits), and has never attained to the giant flow that characterized it before the "freeze" of 1894-5. As it is one of the best sources of honey in Florida, and the best on the East Coast, the loss will be serious to beemen within reach of its blossoms. It is surely badly hurt. With orange honey out of the question, and mangrove probably gone, it will leave rather scanty sources for honey on the Indian River and vicinity.

* * *

Some time ago this department received a communication from Mr. J. W. Eaton, of Welaka, Florida, relative to feeding back honey to the bees. He spoke of feeding dark honey. We cautioned him against letting it get into the super, and he replied: "Your caution about feeding back dark honey to the bees is correct, but I can feed in a way to avoid a mixture of the dark with the good honey." We would add that, if Mr. Eaton has devised a method whereby he can feed back dark honey to the bees and *not* have this dark honey stored eventually in the supers, provided he feeds faster than the bees can consume it at the time, then we wish he would give the readers of Gleanings the benefit of his invention. Let us have the benefit of your experience along this line, Mr. Eaton.

* * *

One of our local druggists handed us a leaflet, taken from *Drug Topics*, the national representative organ of druggists. The illustration is very attractive. One more avenue of distribution! Surely, when even the druggists begin selling "pure honey" as a food, we may conclude that our people of this great land do not buy enough drugs, and hence the drug folk have to sell foods to make money enough. Anyhow it seems mighty encouraging. Sounds a lot better to read of "pure honey" being sold over a drug counter than the usual patent nostrums and curealls and panaceas. What next? Probably the liverystable men and garage men will carry a stock of honey, to supply motor and driving parties with Nature's purest food. Why not?

* * *

This letter from Independence, Kansas, adds one more testimony to the efficacy of the "honey method of queen introduction." It reads:

"*Dear Sir*: — Thanks for telling in Gleanings the honey method of introducing queens. The queens are accepted every time and laying the next day, even when they come thru the mails from Pennsylvania."

Several have intimated that it might be necessary to take the honey from the same hive to which the new queen is to be introduced. To all such it may be stated that no such precaution is needed. The point does not lie in the odor of the honey, nor in the odor of the queen being disguised by that of the honey; rather does it depend on the natural tendency of all bees to lick up any and all sweets, particularly honey, wherever and whenever it is found. And when they are thus licking up honey, they seemingly forget all else, even such a trifle as a new queen! Anyhow, when they come to her at the end of their "licking" they go right on, and "lick her right into laying!" At least that is the practical result of it all. Use lots of honey, at least half a teacupful, but take it from any source you please, just so it is free from disease. Of course, if you happen to live so unfortunately (?) far north as Mr. J. E. Crane, or our Canada friends, you may have to warm the honey; but that is not of any interest to us away down in Florida. It was 86 in the shade here yesterday, February 20th. No need to heat our honeys at that temperature. I would suggest that, the thicker the honey the better, provided you can dip the queen and cover her completely. Too thin honey might run off too quickly. You want the queen to be "messed," and good and well too. Don't be afraid to "souse" her thoroly.

HEADS OF GRAIN FROM DIFFERENT FIELDS

APRIL

BY GRACE ALLEN

Young-eyed April, as you come
Dancing down the path of spring,
All the bees begin to hum,
All the birds begin to sing,
All the earth, that was so dumb,
Has a welcome word to fling
Gaily at you as you come
Dancing down the path of spring.

Crocus, tulip, daffodil,
Violet and buttercup
Open wide for you to fill
All their sudden beauty up.
Pour in joy! What tho it spill?
Bee and lady-bird will sup
At the heart of daffodil,
Violet and buttercup!

Oh the April-hearted bees!
How they hover here and hum
In your fairyland of trees—
Applebloom and snowy plum!
You have perfumed every breeze,
You have made us glad you've come,
But your heart is in the bees
Where they hum and hum and hum!

* * *

Why Extracted Honey Has Such a Future It can not be denied that the present conditions of the honey market are unprecedented. It is evident that, as the people have their attention drawn toward honey, they are not slow to decide in what form it may be used most economically and to their greatest satisfaction.

There are three sides to the honey question—that is, comb or extracted. The producer, the dealer, and the consumer each has to be considered if we are to realize which way the wind is blowing. It may as well be confessed right now that I favor the production and use of extracted honey. From a personal point of view it appears that almost everything favors that form of honey. To mention briefly the acknowledged facts only, there is less trouble with swarming, fewer skilled operators are required to prepare the crop for market, less work in a general sense, a greater yield, a better yearly average, probably less expense, perfect safety for the product for any length of time after harvesting, lower transportation charges, and less risk of damage or loss. Extracted honey can be used in a thousand and one ways, while comb honey can be eaten only with a spoon.

Large amounts of comb honey, crystallized beyond redemption, are now in the hands of dealers; and the common cry is, "What am I going to do?" The dealer can not be blamed if he vows "never again." This is the one phase of the comb-honey predicament which is most serious.

The matter of grading and packing comb honey has ever been a tender point, and disagreements and dissatisfaction are not infrequent. The question of damage and loss in transportation, and the nasty messes and incidental injury to other merchandise have to be faced occasionally, while there are rarely any of these troubles in connection with extracted.

When we come to consider honey from the consumers' standpoint, there is opened a wide field for thought. Honey has always hitherto been regarded as a luxury, and quite rightly too. Comb honey is a raw product. It has enjoyed its predominant position from the fact that it is the original and (until comparatively recently) the only form in which good honey has been known. But man is continually seeking improvement, and adapting natural things to serve better his needs and convenience; and who shall say that the removal of pure honey from the husk is not a part of progress and improvement? Comb honey will always be classed as a luxury (and there is always a demand for luxuries as such), while extracted honey bids fair to take its place with other standard household supplies if the supply can be made dependable.

When the housewife sees comb honey in the store it is not associated in her thoughts with any of the necessary supplies which she purchases constantly, being a distinctly different article. On the other hand, liquid honey naturally associates itself with molasses, maple and other syrups, olive oil, and, in fact, all the kitchen supplies of a liquid character put up in glass and tin (the values and cost of which she knows). Having once made a purchase of liquid honey, and become acquainted with it, she thinks of it, as of her other necessary purchases, without doubt or hesitation.

The past history of the honey market (when honey was, more often than not, a drug on the market) and the present conditions as outlined in Gleanings for January, point to two things at least—that is to say, comb honey has never hit the popular fancy, be the reason what it may, while extracted honey has captured the market, which is good enough evidence that the people are finding that it suits their taste and their purses. The problem now is to see that the supply does not fail.

Hoboken, N. J. C. D. Cheney.

* * *

Best Time to Transfer 1. Is there any time better than another for transferring bees from old box hives to others for increase, not figuring any on the honey?

2. How much wax might one expect to

HEADS OF GRAIN FROM DIFFERENT FIELDS

extract from a given number of pounds of comb—say how much comb in pounds in a ten-frame hive, and how much wax should one get? R. A. Clement.

Willoughby, Ohio, Feb. 15.

A. 1. We usually figure that the best time for transferring is early in the spring, along about fruit bloom. At that time there is very little honey in the hive, comparatively; the colony is not strong, and the whole operation of transferring can be performed much more easily then than at any other time.

If the Heddon short method of transferring is used the bees can be nearly all shaken out and hived on frames of foundation. The transferring can then be carried on at any time.

2. The amount of wax that can be obtained from old combs varies somewhat. From ten Langstroth frames one would get all the way from 2 to 3½ lbs. of wax.

Extracted-Honey Colonies Winter the Best

On page 128, February issue, Mr. Foster says that comb-honey colonies are usually in better condition for winter. Now, I find it the other way. Comb-honey colonies usually crowd the queen in the last part of summer so there is not an oversupply of young bees to winter. At least they can't come up to extracting colonies with young bees. I find that the colonies run for extracted honey winter the best, and are usually stronger in the spring.

Perhaps Mr. Foster means that the extracting colonies have a better supply of honey. Well, the beekeeper can regulate that. I always winter in two-story hives, and the upper stories are mostly solid honey, with some below to carry up in the spring. The bees usually winter in the upper stories. and have their brood-nest there in the spring.

Brush, Colo. Daniel Danielson.

A New Era for Beekeeping in Oregon

The year just closed has marked a new era for this section. The honey crop being somewhat better than in former years, the beemen began discussing things which resulted in an association being formed under the name of "Umatilla Valley Beekeepers," including all honey-producers of the valley. Five officers were elected—three for three years and two for one year.

A bill was drafted and presented to the state legislature, asking state aid in controlling foul brood, etc.

Mutual benefit in buying supplies and marketing honey are objects of the association.

In former years honey production here has been little considered; but now quite a number are going at it in dead earnest; and, if conditions are favorable, 1917 will note a large honey production for this valley. We produce a fine article of alfalfa, sweet clover, and sage.

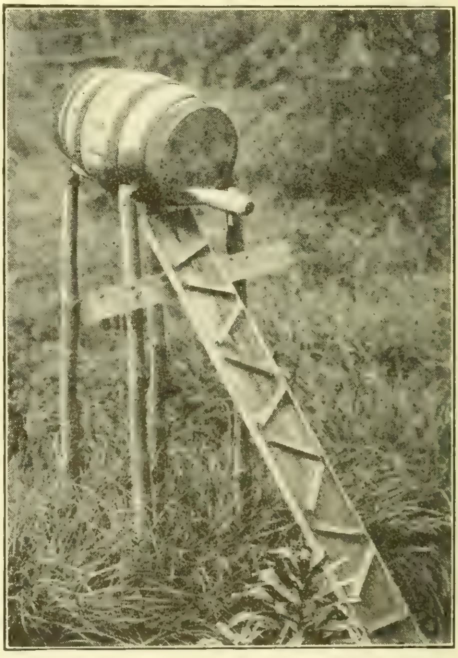
At the meeting an inventory showed 3000 colonies for the district, which will be more than doubled this year.

The past season developed our first foul brood, Mr. J. M. Thorn having to shake 100 colonies in July, which proved successful, and an average of 100 pounds extracted for the season after the treatment.

Hermiston, Ore.

Drip-board Method of Giving Bees Water

To provide my bees with water without the chance of losing any by drowning, I use the contrivance shown in the illustration. It is simply a keg held between four posts, with an unplaned board leading up to it. The keg is provided with a faucet which is opened only far enough for a constant drip to fall on the rough board, across which I nail some flat strips, while two other thin strips are nailed to the sides to prevent the water running off.



Device for watering bees.

I regulate the drip to the need of the bees. When no brood-rearing is going on to any great extent a drop of water every twenty

HEADS OF GRAIN FROM DIFFERENT FIELDS

seconds will be all the bees require. It is not necessary for any water to remain standing between the cross-strips on the board. Once this remains wet, the bees will be able to get all the water they want. But it is an easy matter, of course, to open the cock a little more when the flow of water is considered insufficient.

For my small apiary I have to fill this keg only once every four or five weeks. In a large apiary a barrel should be used. Care must be taken that the drip-board stand in the shade. J. H. Hamelberg.

Soest, Holland.

* * *

All Plans O. K. When the Honey's Coming in On page 1161 E. G. Baldwin tells us what not to do in introducing queens by the honey method. My experience has been that any old method is O. K. when bees are gathering honey freely, and that no method is a success when no honey is coming in.

When I first tried the smoke method I was delighted. I thought I had found just what I had been wanting for years. I introduced a large number of queens with practically no losses; but in the fall, after the honey-flow was over, about 80 per cent of queens introduced were killed. I had the same experience with the honey method.

Last fall I went to an outyard, introduced 40 queens, and lost only one. About a week later, in exactly the same manner, I introduced in the same yard 25 in one day and lost 22 of them. Eight days later I removed all cells, and gave more queens by this same method and had them all accepted. I afterward introduced about 35 more queens in the same yard, with a loss of about half a dozen. In each case the old queen was removed, cells torn down eight days later, and the young queen given.

I had very little trouble with robbers, altho no honey was coming in. The last half-dozen queens given to the bees, I let the robbers get started while looking over the combs to see if they were queenless, and I fear some three or four of those hives are queenless now. J. M. Cutts.

Montgomery, Ala.

* * *

When Excluders are Necessary, and when They are Not For the successful production of bulk comb honey, excluders are very desirable if not an absolute necessity. As to sections, out of hundreds of thousands produced I have never found brood in more than two or three individual sections.

In the production of extracted honey it is no detriment to allow the queen full run of the supers during the early part of the season. There are always some queens that persist in laying in the super, so that, toward the latter part of the honey-flow, it is well to use the excluders in such cases.

As to whether excluders hinder the storing of honey in the supers, I have never been quite able to make up my mind. Very often I find a colony that is backward in storing surplus in the super thru an excluder that will pick up at once when the excluder is removed; then, again, side by side will be found two colonies of apparently the same strength—the one without an excluder moving very leisurely along, and the other with an excluder literally jamming every available cell full of honey, and crying for more space. Tho I find the excluder very valuable in the production of honey, particularly at the latter end of the flow, its chief value to me is its use in manipulating for increase and building up. Jos. J. Anderson.

Salem, Ida.

* * *

Catch Those Drones with an Alley Trap In the Nov. 15th issue, page 1087, B. Palmer asks what becomes of the drones after shaking for foul brood. Provide the hive that the bees are to be shaken into with a good Alley queen and drone trap, and see that it is well secured so no bees or drones can escape without going thru the trap. Just at night place the hive where it is to stand. Smoke the foul-brood colony well. Use a very little tobacco. Close the entrance for two or three minutes. Then shake the bees into the hive with the queen and drone trap on it and close it up. The drones are thus captured so they cannot go into other hives. J. G. French.

Vernon, Conn.

* * *

An Easy Method of Filling Combs with Syrup for Feeding Giving colonies of sealed stores in spring is always recommended as the best method to stimulate bees or replenish colonies short of stores by up-to-date bee-keepers in spring. Having stores on hand for this purpose is not always possible; so some other means must be used. There has been a method used similar to this by filling empty combs with warm syrup (half and half) and placing the same in the hive next to the brood-nest in the evening. So far as stimulating is concerned I believe it surpasses sealed stores. Why this method is not advocated more I do not know unless the method of filling has been too slow or mussy. The following is my method:

I have a box that is made on the order of a Doolitle feeder—large enough to receive a Langstroth frame. I fill this within about

HEADS OF GRAIN FROM DIFFERENT FIELDS

an inch or 1½ from the top and gradually push the comb toward the bottom. Pushing comb downward too fast does not allow the air to get out of the cells. One push downward fills every cell.

The box has galvanized sides 8½ deep, 1⅝ wide, 18¼ long, inside measurements. When tacking on these sides I used cigar-box nails every half-inch. The ends and bottom are made of half-inch lumber. Melted wax is poured along the inside edges. A cleat along the top edges is nailed outside, preventing the metal sides bulging out.

In filling combs in a wholesale manner a tank (or extractor) with a gate is placed on a platform over this box. Otherwise a dipper may be used. J. H. Fisbeck.

St. Louis, Mo.

* * *

Deeper Brood-Chambers Rather than Wider Ones

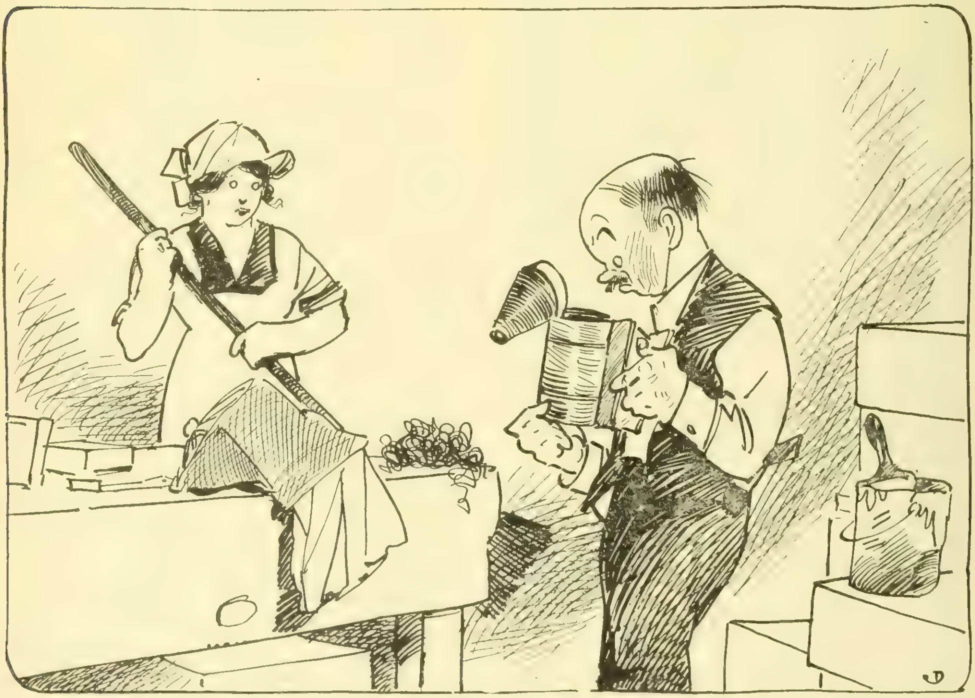
If you have eight-frame hives and fixtures, and wish to change to a larger hive, don't buy ten-frame hives to get a larger brood-chamber. Get the eight-frame Jumbo. The same applies to the ten-frame. This plan gives the increased brood-chamber capacity, and at the same time uses the old fixtures. In my yard I have twenty ten-frame Jumbo hives, and there is no contracting down to " as large as one's fist " in them.

Take, for comparison, a strong eight-frame colony, a strong ten-frame colony, and a strong ten-frame Jumbo. When the temperature was ten degrees above zero the eight-frame hive had a seven-range cluster. The width of the cluster was 9 inches; length, 7 inches, height, 7½; cubic contents of space occupied by the cluster approximately 180 cubic inches.

The ten-frame standard hive had a seven-range cluster; the width of cluster which was 10 inches; length, 10 inches; height, 8 inches —contents of space occupied by cluster 380 cubic inches.

The ten-frame Jumbo cluster had a width of 13 inches; length, 16 inches; height, 11½ inches—cubic contents 1150 inches. Some difference! This is why I am a convert to the large brood-chamber. I don't want them wider. I want them deeper.

Falmouth, Ky. Virgil Weaver.



Ma says she knows why the bees do such a good job of housecleaning every spring. There's no drones in the hive to muss things up all the time.

OUR HOMES

A. I. ROOT

What, therefore, God hath joined together, let not man put asunder.—MATT. 19:6.

YEARS ago, when I first started out in business, I consulted a lawyer in regard to some transaction. Very soon he said something like this:

"Mr. Root, did this man *agree* to do what you seem to think he ought to do?"

"Why, no; I do not think he did agree; but does it not look as if he ought to do so and so under the circumstances?"

His reply was something like this:

"Mr. Root, the man who does all he agrees to do is a very good man."

I made some protest, but had to give it up; and I have often found that the man who adheres strictly to the letter of what he has agreed to do *is* a very good man—that is, when you get acquainted with somebody whom you can actually depend on, thru thick and thin, it is pleasant to know such men, or, if you choose, such women. I know, of course, there is once in a while a man so tricky that he is very careful what he promises, and especially careful about putting it down in black and white, that he may slip out in some way, and be a bad man after all. This matter of divorces has been on my mind a good deal. I have just been thinking that, of all the agreements we make in this life, there is no other contract as sacred and solemn as the agreement before God between man and wife when they come into partnership together.

I recall the morning after Mrs. Root and I were married, over fifty years ago. Something seemed to say to me, altho I was not a professing Christian at the time, that a new era was just opening to both of us. We were to start with horses and carriage on a honeymoon trip, and we were waiting for the friends to get ready. We happened to be alone by ourselves. I put out my hand to her, and she looked smilingly up into my face while I spoke somewhat as follows. It was a boyish speech, but it was honest. Said I:

"Sue, the agreement between us two that we have just entered into is the most sacred and solemn step in our two lives. Let us fully consider the new relations that rest on the shoulders of both of us; and may God help us to bear with each other, and to bear with patience the new responsibilities that are going to rest on us two. May we two, thru thick and thin, for better or for worse, cling to each other."

The carriage was ready about this time, and off we started; but I felt happy, and my conscience indorsed this little prayer (if it might so be called) as we started away. As the sun came up, and we felt the inspiration of the autumn morning, I looked into the face of my young bride and took her hand while we sat there in the carriage, and a great joy came into my heart to think that she was going to be close by my side in the weeks, months, and years to come. For a year or two before our marriage I had walked twice a week or oftener about three miles to her father's home, sometimes thru mud and rain and sleet, just for the purpose of being with her a few hours; and now she was to be with me always—mine for ever, mine while life should last. May I be pardoned for saying that the dear little woman has most faithfully kept *her* part of the pledge year in and year out? Oh! what would I give if I could truthfully say, "*I* have done as well, or even approximately as well"?

I have always opposed divorces—at least ever since I started to follow the Master. A good many times it has been my privilege to plead with man and wife, sometimes successfully, but not always. I remember that years ago a man with whom I was pretty intimately acquainted had just decided to run away and leave his wife and children. He thought the provocation was sufficient. I tramped down to their home one Sunday morning, taking my Bible with me. I exhorted and protested, but it was with but little avail. Finally I asked them to kneel down with me in prayer. I prayed as well as I could, not only for the unhappy parents, but for the two or three children then present. The prayer, altho it was perhaps an awkward one, and ungrammatical, did the business. The husband and wife, with clasped hands, promised before God to start a new life; and the one who had been, perhaps indiscreetly, the cause of the trouble, promised to go away off and thus remove temptation. This man now has a beautiful little home and a fine farm, several children, and both the parents are in regular attendance, I believe, at the church where they belong.

Many times, when you come to know all

the circumstances, it looks very much as if the parties had *better* separate; but I do not think I have ever advised a separation. If even one of the two is a professing Christian, the troubles may almost always be fixed up.

The saddest part of the divorce business comes in where there are children. Oftentimes I have said to the parents, "These are your children. You are father and mother to them, and always will be. There is no power on earth to make it otherwise."

I have said to the children, "He is your father, and no power on earth can change it. A sacred obligation rests on you that can never be changed."

I said in substance the same thing to the father. I am glad that I cannot recall that there was ever any necessity of saying so much to the mother. Just imagine, if you please, the effect on the children when there is a quarrel between their parents. What a sad thing to contemplate! I have said, and say it again, for the sake of the *children* if for nothing else, stick together in some sort of fashion rather than separate.

Sometimes I am told by one or both, "God did not bring us together. It was just our own foolish blundering."

To this I reply, "My friends, you consented to this union before God. You asked God to witness, and the command is binding upon you. You *are* together—there is no getting rid of it. You are father and mother to the children that are an additional seal to the contract or bargain. They are your own children, and no power on earth can make it otherwise."

Many business houses at the present time say, in different ways, "Money back if you are not satisfied." That is, after you have received the goods and given them a test, if they do not prove exactly as represented or what you expected, you can send them back and have your money. My good friend, you *cannot* take a wife in that way. I do not know but the experiment has been tried by a class of people who call themselves "free lovers" or something of that sort; but it has never worked. Such plans are a scheme of the devil, and wreck and ruin follow. What are you going to do with children as the result of such a proceeding? The laws of man and laws of nature protest against such inventions.

Years ago we used to have a sort of lunch-room or restaurant for the benefit of employees, especially those who live too far away to go home to dinner. One day the woman in charge of the lunch-room called me in. Pointing to a low-lived-looking chap who sat at the table she said, "Mr. Root, this fellow came in here and ordered dinner. As it was before dinnertime I went to work and got up a dinner for him as good as I know how, and now he says he has no money. What are you going to do about it?"

My first impulse was to hunt up a good club and tell him that unless he paid over the 25 cents for the dinner he had ordered I would "take it out of his hide." I think that must have been before I enlisted as a Christian. The more I thought it over the more I decided there was nothing *to* do. So I said, as meekly as I could, "My friend, you probably mean that the next time you come along here you will pay the 25 cents you owe us?"

Of course he gave the promise quite cheerfully. Now, this may be a homely illustration; but it strikes me that all mankind, from the least to the greatest, should regard the marriage contract something in the same way. It cannot be undone. There is no such thing as "money back if you are not satisfied" between man and wife.

Now, I confess, dear friends, this is quite a long preamble to a clipping from the *Sunday School Times*. If all our readers would subscribe to the *Times* I would not need to give so much space to extracts here.

> An ideal nation will always do right. No nation is or has been ideal. We have not always done right. We have again and again violated treaties. We have broken our word. We have made promises and have not kept them. We are in no position to judge other nations. By what judgment we judge them we ourselves are condemned. We need to repent for our own misdoing and not play the Pharisee in any boast of superior national virtue.
>
> The evils of divorce and the saloon will not exist in an ideal nation. Bishop Moreland, of Sacramento, says:
>
> "The average for the nation is one divorce in twelve marriages; for the Far West, one to five. The highest record heretofore has been held by Japan, where the proportion was one to three prior to 1897. In that year Japan, determined to rise to a more decent civilization, adopted a uniform divorce law, and since then has never exceeded the rate of one to six.
>
> "The census shows that in 1864, when the population of the United States was 30,000,000, there were 8551 divorces granted. In 1914, with a population of 90,000,000, the divorces numbered 110,759. The population has increased three times; divorce, twelve times. In a half-century our neighbor, Canada, allowed but 600 divorces, the United States 2,063,812. Over 20,000 Canadians crossed the border to obtain divorce in this country. Our evil example makes it harder for a sister Christian nation to maintain a pure family life. Forty per cent of the children in reformatories and orphanages of the Pacific Coast are offspring of divorced parents. Divorce is the darkest cloud on our American life."
>
> And what boast has any nation that it can make when it suffers the liquor traffic to control its politics, to impoverish its wealth, and to debauch its life?
>
> The nation needs God, not on its coins only, but also in its life.

The first paragraph attracted my attention. Is it really true that there is not a nation on the face of the earth that *always* does right? If so, I suppose we shall have to wait until we are assured that "*God's* kingdom" *has* come. The statement in the above, in regard to divorces, is worse—far worse—than I supposed. May God be praised for the good record that Canada makes in this matter. Can somebody tell us how it comes about? If 20,000 Canadians have really crossed the borders in order to obtain divorces which they *could not* get at home, may God have mercy on us. And now comes the astounding statement that 40 per cent of the children in reformatories are the result of divorced parents. We have been in the habit of thinking that the liquor traffic is the darkest cloud that shadows America; but the above would make it seem that this *may be* a mistake.

In conclusion let us consider that last paragraph, that we need God, not only on our coins, but also in the lives of our people.

"What God hath joined together, let not man put asunder."

After the above was in type my good friend, Rev. A. S. Gregg, of the Civic Reform Club, sent me the following clipping from the *Commercial Tribune*, Cincinnati:

> The investigation conducted by Rev. Mr. Gregg has disclosed a deplorable condition in Ohio as regards divorces. For every three marriages in the state last year one divorce was started; and for every six marriages one divorce was granted. A decade ago there was an average of one divorce to every twelve marriages. Lucas County shows one divorce to every four marriages.
>
> It is also into the *causes* of divorce that Rev. Mr. Gregg proposes to make an investigation. In Ohio last year 299 divorces were granted husbands on the grounds that their wives had been unfaithful. But only 196 divorces were granted on the grounds that the husbands had been unfaithful.
>
> Records show that wives obtained 3014 divorces for absence and neglect while only 1354 were granted to husbands on the same allegations. On charges of drunkenness, 394 divorces were granted wives, while only thirty-eight were given to the husbands of drunken wives. In suits which charged cruelty on the part of the husbands 1607 divorces were granted to women while only 201 were granted to men who were mistreated by their wives.

PRAYING TO BE "SEEN OF MEN."

A good brother sends us an article, too long to print, in regard to that paper about "talking with Jesus;" but I will make just one brief extract, omitting his name for obvious reasons:

> Having listened to prayer by a lady whose utterances were the embodiment of perfection in her choice of words, I regretfully learned afterward that this person merely prayed in public to be heard of men and women, and that her life was far from being blameless. The reaction at that time (before understanding prayer as I now do) placed me further away from churches where audible prayer was carried on, tho little understood as prayer is understood today.

The above not only hits me but it disturbs me quite a little. A good many times I am asked to lead in prayer in our prayer-meetings, and also am often asked to close with a brief word of prayer, etc. Down in our Florida home the superintendent of the Sunday-school usually, when announcing a hymn, says, "Brother So and So will lead in prayer at the close of the hymn." This gives the brother an opportunity to prepare himself; and I do believe it is a good plan all around to give any brother or sister a little opportunity to get ready. Now, in this mental preparation should we consider how our prayer may be taken by the audience, or how it will be taken by the Lord? and as I have been thinking it over my conscience has troubled me because I have thought too much of what the audience might think of my prayer, especially when among strangers. After praying over this very matter I have decided that a prayer before an audience should be a little different from one made while we are off alone by ourselves "talking with God." On several occasions I have been asked to lead in prayer quite unexpectedly; and quite often at such times I have found myself in no suitable frame of mind, if I may so express it, to lead in prayer. At such times you can hardly imagine how fervently my short prayer wells up, "Lord, help!" and the help comes. Perhaps it comes all the sooner because it is nearer the "Lord's prayer" than A. I. Root's prayer. I do not mean that I use the Lord's prayer as given in the Bible, but a prayer fitting the circumstances that the dear Savior furnished on "short notice;" and a feeling of happiness comes into my heart afterward because I have tried, at least once, to let the dear Savior speak instead of too much of my own poor self.

"DID GOD MAKE WOMAN TO BE MORALLY SUPERIOR TO MEN?"

The above is the title of a sixteen-page pamphlet by Prof. T. W. Shannon, of Delaware, Ohio. I copy one paragraph from the first page. You can get the whole of it from Prof. Shannon as above. The price is two for 5 cts.; ten or more, 2 cts. each.

> In every land, in all ages, among all races, sages and saints alike—Jews and Gentiles, Mohammedans, Buddhists and Christians, barbarous and civilized peoples—all have held a higher standard of morals for women than for men. Many more women

accept Christ and unite with the church than men. In our penal institutions seven or eight times as many men as women are found. Men swear a hundred times where women swear once; they use a ton of tobacco where women use a pound; they drink a barrel of whisky where women drink a pint; they sow their "wild oats" where women sow purity and love. Are these social and moral differences conclusive demonstrations that men are inherently more depraved than women, and that women are inherently more moral than men? For ages man's selfish interests have led him to affirm this to be true. During the same period of time woman's acquiescent nature and fondness for compliments have led her to accept this general opinion. Never in the history of human cupidity was a cleverer trick pulled off by man.

NATURE'S SKILLED ARTISANS.

A few evenings ago our neighbor, Mr. E. B. Rood, said in prayer-meeting, by way of illustration, that the point of the finest needle, under the microscope, looked like an awkward unfinished crow-bar in comparison with the sting of a bee. He was comparing God's work with man's. The work of the bee in creating the waxy cells has often been commented on. Well, our old friend A. T. Cook has just given me another surprise along in the same line. See below:

> We have a colony of wild beavers about 12 miles east of here. Nobody seems to know where they came from.
>
> I went to see their work, and brought home souvenirs. I enclose a few chips.
>
> They have built a dam at the outlet of a lake, raising the water fully 3 feet.
>
> Scores of trees are cut down. Many of them measure 7 to 10 inches in diameter. Their home is in one of the wildest places I have ever seen. Their dam is 40 or 50 feet long. A. T. Cook.
>
> Hyde Park, New York, Jan. 4.

Were I not told these chips were the work of beavers I should say they were certainly made by a skilled workman with the keenest of tools, well tempered and sharpened for the work. "Manifold are thy wonderful works, O Lord."

WILBUR AND ORVILLE WRIGHT.

As I was with the Wright Brothers when they made their first success in getting the machine to turn around and come back to the starting-place, you can realize somewhat the pain I felt when I saw, as the years have passed, efforts to rob them of their hard-earned title to being the originators of the art of flying. In view of this you may realize how it rejoiced my heart to find the following in *Collier's* for Jan. 6:

THE TITLE TO AN HONOR.

> We should have thought that, if the authority of the great inventions of history were investigated, the one upon which the least shadow of doubt could be cast would be the invention of the aeroplane by Orville and Wilbur Wright. Of course there will always be a certain number of whimsical persons who instinctively resent giving credit where credit is due, and who, when anything big is done in the world, begin to look around for a village obscurity "who really conceived the idea." They like to be cheated and fooled. They are the same kind of people who still believe in the Keely motor, think Dr. Cook discovered the North Pole, Bacon wrote Shakespeare's plays, and Rostand stole "Cyrano de Bergerac" from a Chicago dealer in suburban real estate. But it is surprising to find that so well informed a man as Dr. Eliot—to whose judgment on any subject we usually defer—is reported to have ascribed the creation of the flying machine to Professor Langley. Professor Langley was a brilliant, ingenious, and modest scientist. We mean no disrespect to his memory when we say that Langley was, no more than Darius Green, the inventor of the essential contrivances for flying.
>
> The attempt to discredit the originality of the Wrights, and to rob two fine Americans of an honor that will outlive all marble, started with a group of men who took out of the Smithsonian Institution the old Langley machine which had been wrecked in launching, changed the shape and weight of the ribs, the shape of the propellers, the controlling device, the starting and landing gear, added a number of devices which were peculiarly the inventions of the Wrights, secured a competent press agent, and turned the machine over to a skilled aeronaut, who, after much effort, succeeded in making the flying-machine—not fly—but *hop*. Between this confection and the Wright aeroplane as much difference exists as between a squat toad and a swallow. And, bad as it was, this was not the original Langley machine, but an industrious improvement on it. The old Langley machine, we are told on good authority, "failed to fly because the wings collapsed from not being strong enough to carry the strain; even if it had been strong enough it would not have been a practical flying-machine, because it had no means of control except in a perfect calm; it was the discovery of a means of control, the solution of the problem of equilibrium by the Wright brothers—and by them alone—that conquered the domain of air for mankind and brought in the age of flying."
>
> Langley's unsuccessful attempts were made only after the Wrights had completed their invention and progressed far in the actual use of it. They had proved out their system of control by gliding flights in 1902, and had thereby solved the problem of human flight, and they filed their application for their fundamental patent in March, 1903. It was not until more than six months after the latter date that Langley made his unsuccessful attempts at flying—the only ones that he did make. These attempts were made on Oct. 7 and Dec. 8, 1903. They proved nothing but failures, and added nothing to the contribution that the Wrights had made to the science in the previous year. On December 17, 1903, the Wrights again made completely successful flights, but this time with a power-driven machine, and as a result of their quiet, unadvertised, and well-directed work.
>
> Collier's takes a special interest in this question because it had the good fortune to be among the first of American publications to believe these two modest young men had solved the problem of aviation which had baffled inventors for centuries; and it does not intend to stand by in silence while a predatory attempt is made on the just renown of the two great geniuses who conceived the idea of the aeroplane and worked it out with infinite patience and self-effacement. The fact that these two men disdained advertising their own achievement is all the more reason why their countrymen should defend their reputation. The example they gave in the

> steady pursuit of their object without haste and without pause, their refusal to put out reports of their incomplete work, their avoidance of publicity, is as refreshing as anything we know in an age when inventors get almost as much space in the newspapers as chorus girls. There never was a finer character than Wilbur Wright. He was the American we read about more often in books than meet in actual life. It was delightful to observe this composed, shrewd, humorous, well-balanced product of Ohio coming out of his workshop to meet with level eyes and imperturbable smile the gushing world, putting his own and nobody else's value on what he saw and heard, and treating even flattery with perfect good nature. We don't think the American people will consent to see the memory of such a man deprived of any of the fame that belongs to it, or that they will hesitate to display, if the need arise, their gratitude for the honor the Wrights have brought to their country.
>
> Misinformation cannot long obscure this fact of history—that *the Wright brothers were the first persons to leave the earth in a mechanically propelled plane and to invent the means of controlling that plane.*

In connection with the above it may be well to state that GLEANINGS was privileged to give the first account, by an eye witness, of their invention of any magazine or periodical in the world. See GLEANINGS for January 1, 1905, p. 32.

Just a word in closing about Wilbur Wright. We had many discussions during the days I was with them in regard to the value to the world of their invention. I insisted it would result in something like Columbus' discovery of America, etc., but Wilbur, with a sad, far-away look on his face, declared its first use would be for *war purposes.* God knows he had no sympathy for anything along that line. As the years have passed, and we hear of the invention only in connection with war, I am reminded of his prophecy.

HEALTH NOTES

"THE HIGH COST OF"—BUTTER.

By some means or other, Mrs. Root and I have for years past had a sort of notion that it is almost as "wicked" to buy "oleo" in place of butter as to buy glucose in bottles in place of honey; but when the boycotting women of Cleveland, Ohio, advised using oleo until dairymen came down a little, it was quite a jolt. Well, down here butter has been fifty cents; and when we got some that was rancid, Mrs. Root said "try oleo," which was only *33 cents.* To my surprise I liked it just as well, and it seemed just as wholesome. When Mrs. Root found most people down here were *also* using it she didn't feel ashamed any more to go into the grocery and ask for it. Well, now, read the following from the Jacksonville *Times-Union*:

> The business managers of the homes of Jacksonville will meet tonight for a further discussion of the high cost of living. Mere discussion is not entirely unavailing, but discussion accompanied by action is far more effective. The price charged for butter is outrageous. Agitation has somewhat lowered the price of eggs, but the price of butter is fully as oppressive.
>
> The women of Jacksonville can take action tonight in a way that, if followed up elsewhere, will reduce the price of butter ten cents a pound. At least ten cents of the price of butter is a matter of law. It is due to a law enacted for no other purpose than to make the people pay an exorbitant price for it.
>
> A bill is now before congress to have this tax repealed. There is a special reason why the people of the South should advocate its repeal. It discriminates against Southern products. Last year 30,000,000 pounds of peanut and cotton-seed oils were used in the production of margarine. If the tax intended to decrease its production were repealed, much more of it would be produced and more of these Southern products would be used in its manufacture.
>
> Margarine is rigidly inspected, and those who buy it know it is clean. They don't know this of the butter they buy. They also know it is healthful. We are sure State Chemist Rose will pardon us for quoting a remark he made in the *Times-Union* office a year ago or more when asked about margerine. He said: "When I am at home in Tallahassee I eat butter because I know it is clean and fresh. When I am traveling I always eat margerine because I know the inspection laws guarantee its cleanliness, and I don't know anything about the butter."
>
> There are some who are prejudiced against this product; but we do not know why. There are some who like butter better, and others who do not wish to appear to economize. But this matters not at all. There are some who eat margarine, and the number of those who use it would be increased if the tax were taken off and they could get it cheaper. Those who use it would not use butter or would use less of it. With a smaller demand for butter the price would decline, and those who prefer it would be able to buy it for much less than they have to pay now.
>
> If the Women's Club would indorse the Aswell bill for the repeal of the tax on margarine and of the unreasonable restrictions that hamper its sale, and that were imposed for the purpose of hampering its sale in order that the dairymen might get higher prices for butter, they would greatly help in the passage of the bill; and by giving such people as would use it a cheap substitute for butter they would reduce the price of butter.

I confess it is entirely new to me that "margarine," as they call it, is a *vegetable* product, or at least largely so. "Thirty million pounds!" Dear me! Where is Dr. Kellogg and the Michigan sanitarium? Why have *they* not, years ago, advised a *vegetable butter* instead of animal? Nuts has been their forte—at least largely. Is it really true the farmers of our land have been, for selfish interests, putting a burden on us down here? I should like to hear from our good friends of *The Rural New-Yorker.*

CORN MEAL, ITS FOOD VALUE, AND SOMETHING ABOUT THE HIGH COST OF LIVING.

The following I clip from the Medina County (Ohio) *Gazette.* It may not all be exactly true, but it certainly is *largely* true.

> In these times of the high cost of living, and particularly of the heights to which the prices of wheat and flour have soared, the average American loses sight of the value of corn as food.
>
> Corn is cheap, comparatively. Wheat is high, very high. We have much corn. We have little wheat. We have raised three thousand million bushels of corn in one crop. The greatest crop of wheat we ever produced was one thousand million bushels. Of the crop this year our yield of corn is four and a half times that of wheat.
>
> Dr. Barnard tells us cornmeal at three cents a pound is equal in value to two loaves of wheat bread.
>
> Based on food value, corn in the form of meal or hominy is the cheapest foodstuff obtainable today.
>
> The South knows corn. To the North and West it is little known, comparatively.
>
> Again, Dr. Barnard tells us three cents' worth of cornmeal contains as much nutriment as 91 cents' worth of eggs at 50 cents a dozen, or 56 cents' worth of round steak for which you pay 30 cents a pound.
>
> The high cost of living touches every pocketbook. If you would lighten the strain on your purse, study the virtues of corn.
>
> Today the American housewife uses 10 pounds of wheat flour to one pound of corn—corn of which we have an ample quantity, and wheat of which there is a scarcity that approaches famine.
>
> Cornmeal at three cents a pound is equal in food value to six pounds of potatoes, for which the housekeeper today pays 20 cents.
>
> It is equal to a pound of cheese, for which she pays 30 cents or more.
>
> It is equal to six pounds of bananas, 11 pounds of oranges, 14 pounds of cabbage.
>
> The corn that we cook into corn cakes, that we eat as hominy and mush, costs only one tenth as much as some of our breakfast foods.
>
> Cornmeal and hominy contain twice as much fat as any other cereal except oats, and the world knows the worth of oatmeal.
>
> Think of corn, study corn, talk of corn. The result will be to your benefit and to the benefit of America.
>
> Eat corn bread. Get to know the corn bread of the South. Have a real Southerner serve corn bread to you once, and the wheaten loaf no longer will have its present appeal.
>
> Know the corn pone, if opportunity offers. Know hominy. Know the grain of all grains, corn.

The statement in the above in regard to eggs may be a surprise to many; but it is quite in accord with some experiments of my own toward 50 years ago. reported in the Home papers, then just started. I made an entire meal of different articles of food, figured the cost, and then did a good hard day's work with the bees, garden, etc., to see how I held out. One morning my breakfast was not a thing but eggs. My impression was I ate nearly a dozen; at any rate, it was one of the most expensive meals, and I became faint and hungry before dinner. The meal that gave most endurance for the money was *beans.* I think corn meal was a close second. All sorts of canned foods bought at the groceries figured in cost " away up."

"ENSEROL," BORIC ACID, ETC., FOR THE EYE AND EAR.

Some time ago I mentioned a medicine called "enserol" that was sold at $2.50 an ounce, or something like that, and that our Ohio Health Department had pronounced it simply boric acid in solution, and that the patent-medicine quack was charging $2.50 for something which could be had at the drugstore for five cents. This enserol, in connection with glycerine, was recommended for deafness. Some time ago when I got up one morning one of my eyes was paining me, and I thought something had got into it. I called our family doctor, and he made a careful examination, but said he could find nothing; but he suggested a little boric acid in solution might help, and the relief was instantaneous. Since then I have found our neighbors have been using the same thing for troubles with the eye. I was reminded of the above by the clipping below which I take from the Cleveland *Plain Dealer.* I give it here because it tells just how strong a solution to use.

> "Pink eye," or acute epidemic conjunctivitis, is a common disease of the eye, and is caused by a germ. This may be treated by closing the eye and then applying a lotion consisting of ten grains of boric acid to one ounce of boiled water. The powders should be dissolved in the water while it is hot.

HONEY IN PLACE OF SUGAR.

Dr. J. H. Kellogg gives the following in *Good Health* for December:

> HONEY AS A DIABETIC FOOD.
>
> A Russian physician, Davidoff, reports an observation of seven diabetic patients in whom he found that great benefit followed the substitution of honey for sugar and other sweets. The sugar of the urine was diminished and acidosis was prevented.
>
> This reminds us of what John Burroughs once said about honey:
>
> "It is a more wholesome food than sugar, and modern confectionery is poison beside it. Besides grape sugar, honey contains manna, mucilage, pollen, acid, and other vegetable odoriferous substances and juices. It is a sugar with a kind of wild natural bread added."

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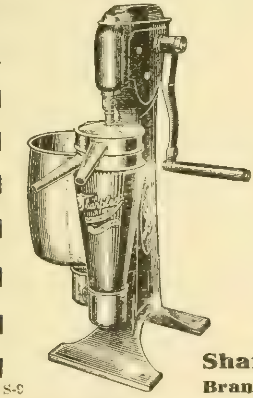

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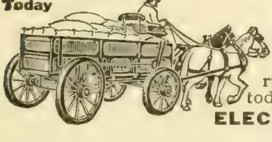

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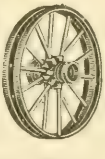

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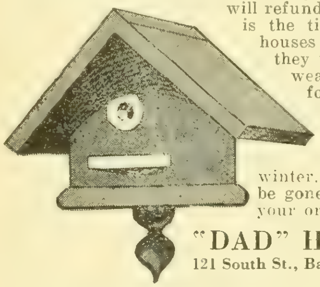

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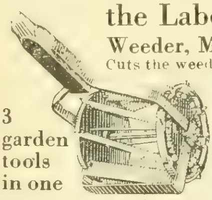

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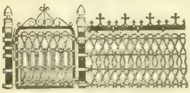

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MAKING THE WORK COUNT

Continued from page 260

that the wires almost instantly sink to the center of the foundation; then when the current is cut off and the wire has cooled it is almost impossible to tell from which side it went in. The full current can not be used, of course. A small transformer, such as is used for choking the ordinary lighting current down to about five or six volts for running children's toys, is just about right. Or, as mentioned by E. L. Sechrist, p. 316, April 15, 1916, the current may first be run thru an electrical flat-iron to reduce it to the proper amount. With neither at hand, enough heavy wire may be coiled up for resistance to give the desired amount of reduction.

If there is no electric current from a lighting circuit, electricity may still be used. G. Herman Peterson, of Deerwood, Minn., a few weeks ago sent in the imbedding-device shown in Fig. 10. Four dry cells are used to heat a single strand of wire. The current enters thru the prong at one end of the device, and out thru the one at the other end. The two prongs in the center are merely to press the wire into the wax. The device is held in position with the two outside prongs both resting on the wire. The button is pushed, and the wire immediately heats and melts its way into the foundation. In 1903 and '04 The A. I. Root Company sold an outfit almost identical with this, but it was found that the dry cells deteriorated very rapidly under the heavy strain imposed on them. I find that four dry cells, testing 20 amperes each, after fastening all four wires in 100 frames deteriorate in strength to 15 amperes each. However, as a matter of fact, dry cells are much more efficient than they were ten or twelve years ago. By this plan, heating a single strand of wire at a time, it takes only three minutes for imbedding the wires in ten frames.

* * *

Continued from page 264

ized farming, and only by specializing have people been successful as a rule.

In conclusion it is but fair to say that beekeepers, fruitmen, dairymen, and others can and are making a living, or a little more, depending upon their ability and knowledge of their business; and that there is room for many more people of the right kind in all lines right here in this valley. But money does not grow on trees and bushes, nor in hives, here, any more than it does in the eastern states. The San Joaquin Valley will stand on her own merits without any "boost" advertising. The truth is enough. She will bear the closest investigation by those who really desire to do their share as producers. But let the man beware who attempts to make a living from the products which are daily going to waste in this valley.

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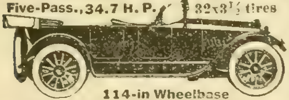

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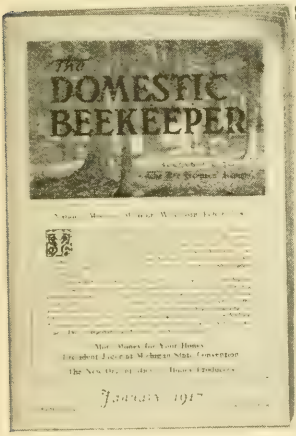

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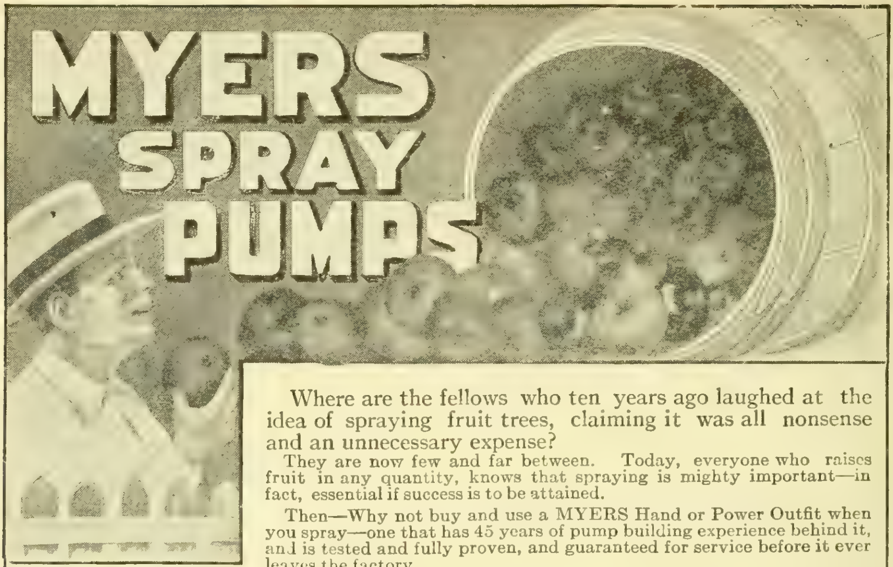

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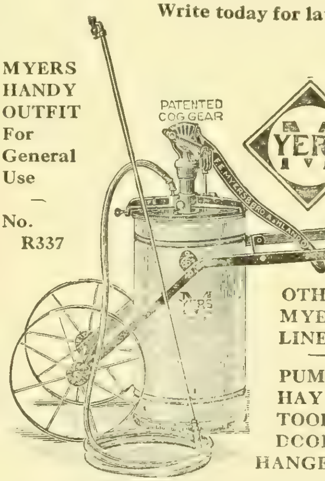

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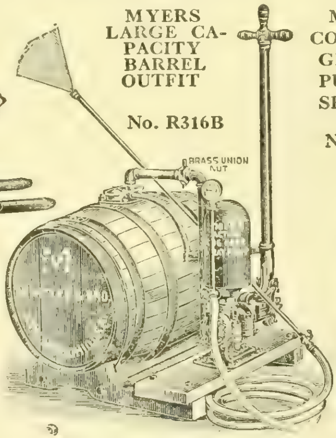

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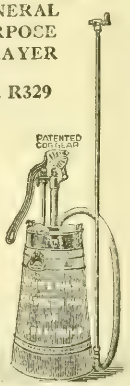

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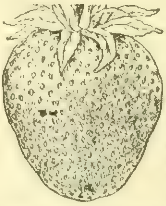

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Only a small deposit down required.

LARGEST AND MOST SUCCESSFUL SHIPPERS OF BEES IN PACKAGES

M. C. BERRY & COMPANY, Hayneville, Alabama, U. S. A.

BEEKEEPERS' SUPPLIES

Send for new 1917 price list now ready. We are also in the market at all times for extracted and comb honey in any quantity. Give us a chance to bid on your supplies. We can save you money.

The M. C. Silsbee Co., Haskinville, N. Y.
P. O., Cohocton, N. Y., Rt. 3.

FRUIT GROWING and BEEKEEPING

are two closely allied occupations. Beekeepers should read "THE SOUTHERN FRUIT GROWER" which treats on all the phases of successful fruit-growing, also gardening, etc. Established for more than 20 years. Edited by Robert Sparks Walker. 50c per year; 3 years for $1, or sample copy sent free to those who are interested. Address

THE SOUTHERN FRUIT GROWER
Chattanooga, Tenn.

Bee Line Bees and Queens
for Quality . . . Service

Our Italians are hustlers, gentle to handle, cap their honey white, are very resistant to European foul brood, and are very handsome bees to see. In fact, they are second-to-none bees.

Satisfaction and safe arrival are guaranteed. Orders are booked now and bees shipped when wanted.

Bees by the pound are ready for shipment now. Prices quoted are without queens.

1-lb. package, $1.50; 6, $ 8.50; 12, $16.00; 25, $33.00; 50, $ 65.00; 100, $125.00
2-lb. package, 2.50; 6, 15.00; 12, 29.50; 25, 58.50; 50, 116.00; 100, 225.00

With each shipment of bees we send printed instructions as to how to build them into full colonies.

Queens.—We have wintered over a lot of fine late fall-reared queens. Should you want a tested queen early we have them. We also wlll soon be sending out this season's reared untested queens. All of the queens we send out are sent out under an iron-clad GUARANTEE to satisfy or they will be replaced, or your money you paid us for them refunded. Prices for queens till May 10th.

Golden Italian and three-banded Italian.
Untested, 1 for .... $1.00; six for $ 5.50; twelve for $10.00; 100 for $75.00
Tested 1 for ...... 1.25; six for 6.50; twelve for 12.00;
Select tested ...... 2.00; six for 10.00; twelve for 18.00;

With each shipment of bees and queens we send state entomologist's health certificate. Any queens that we send out that should prove mismated will be replaced when returned to us.

Our three-banded Italians again last fall, 1916, captured the first honors at the State Fair of Texas. Please remember that there are no better bees and queens than what we have, and we are perpared to care for your orders promptly.

B. M. Caraway, Mathis, Texas
Bee Line Apiaries

Full Values in
"Falcon" Beekeepers' Supplies

For the last forty odd years during our manufacture of "**FALCON**" supplies it has been our endeavor to place upon the market the very best possible line of supplies, and we pride ourselves in having accomplished this. "**FALCON**" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "**FALCON**" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "**FALCON**" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid Dealers Everywhere "Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK
where the good beehives come from.

The Proof of the Pudding is in the Eating

The quality of Murry's queens and bees is shown in the increasing demand for them. Capacity of queen yards doubled last year and again this season. Advance orders up to March 5th nearly as many as total sales last year. Many old customers are doubling their orders for this season. Why? Because they get a square deal.

Three-banded Italians and Golden Italians. Orders filled by return mail. Safe arrival and satisfaction guaranteed. No disease. Health certificate with each shipment of bees or queens.

Prices	March 15th to May 1st		
Queens	1	6	12
Untested	$1.00	$ 5.50	$10.00
Tested	1.25	6.50	12.00
Select tested	2.00	10.00	18.00

Breeders ......5.00 to 10.00 each, any time.

Prices	May 1st to Nov. 15th			
Queens	1	6	12	100
Untested ...	$ .75	$4.00	$ 7.50	$60.00
Tested	1.00	5.50	10.00	
Select tested	1.50	8.00	15.00	

For nuclei and pound packages, see March issue of this journal, or write for circular.

H. D. Murry, Mathis, Texas

Quality . . . Service System

We quote the following prices for April and May:

	1	6	12
Untested	$1.50	$ 7.50	$12.00
Tested	2.00	10.50	18.00

Select Tested..$3.00 Select Breeder..$5.00
Extra Breeder..$10.00

	1	6	12
1-lb. Bees	$1.50	$ 8.00	$15.00
2-lb. Bees	2.50	14.00	27.00
3-lb. Bees	3.25	18.50	35.00

	1	6	12
1-Frame Nuclei.	$2.00	$10.50	$18.00
2-Frame Nuclei.	2.50	12.00	22.00
3-Frame Nuclei.	3.50	20.00	37.00
5-Frame Nuclei.	5.00	22.00	40.00

No queen furnished at the above prices on packages and nuclei. Select kind of queen and add her price, no charge made for clipping.

We guarantee safe arrival on bees and queens in the United States and Canada. We are in a position to furnish price on both bees and queens in large lots. OUR stock is the finest that can be had. We guarantee every queen to be purely mated, or we will replace same by return mail, all orders filled promptly. Our mail and express service is the best, having 24 out-going trains daily.

J. E. Marchant Bee & Honey Co.
Columbus, Ga., U. S. A.
The quick center for deliveries.
A trial will convince you.

If You Need Queens for Good Results We Have Them.

As Foul-brood Resisters none are better. . TRY THEM.

GOLDEN QUEENS.

1 Untested, $1.00; six, $5.00; twelve, $ 9.00
1 Tested, 1.50; six, 8.00; twelve, 15.00

THREE BAND QUEENS.

1 Untested ....$ .75; six, $4.00
1 Tested .... 1.00; six, 5.00

NUCLEI THREE BAND ONLY.

1 Frame with Untested Queen, $2.50; six, $15.00
2 Frame with Untested Queen, 3.50; six, 18.00
3 Frame with Untested Queen, 4.00; six, 20.00

If Tested Queens are wanted add 50c extra to nuclei. Satisfaction guaranteed.

W. J. Littlefield, P. O. Box 582, Little Rock, Ark.

BEES

If you are thinking of buying bees this spring, we would be pleased to hear from you. We furnish full and nucleus colonies, bees by the pound, and queens.

A strong colony of Italian bees with a tested Italian queen, in a new 8 fr. D. T. Hive, complete with super, for $11.00. Tested Italian queens $1.50. Untested $1.10.

We have 700 colonies of bees, producing tons of honey, and know the value of good stock.

Our catalog of bee supplies, honey-jars, and everything a beekeeper uses, mailed upon request.

I. J. Stringham, 105 Park Pl., N. Y.
Home Apiary: Glen Cove, L. I.

BY RETURN MAIL

Choice Tested Queens, $1.00 each, reared last fall and wintered in four-frame nuclei. Queens that give satisfaction, bees that get the honey, our strain of three-band Italians. No disease in this locality. Satisfaction guaranteed on all queens. Untested queens in April and May, single queen, $1.00; $9.00 per doz.

J. W. K. Shaw & Co., Loreauville, La.

AT BOSTON

New England beekeepers will find everything in the way of supplies they will need the coming season. Place your orders early and avoid the rush. Send for catalog.

H. H. JEPSON, 182 Friend St.

SOUTHERN-BRED BEES AND QUEENS

REARED IN THE GULF COAST COUNTRY

THREE-BANDED ITALIANS. We are breeding from the best selected from ELEVEN YARDS. Ten per cent discount on all orders received 30 days before shipment is to be made. We believe that there is a BRIGHT FUTURE before the Northern beekeeper in making up his winter loss and strengthening up his weak colonies by getting bees from the South in 1 and 2 lb. packages; and you can always have your queens sent safely this way. Every beekeeper knows what it means to have strong colonies at the commencement of the honey-flow. Every northern beekeeper ought to try from 2 to 5 packages this year. It will not cost you much, and may mean much to you in the FUTURE. We guarantee safe arrival on all bees in 6 days of here. Reference, The Guaranty State Bank, Robstown, Texas.

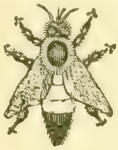
	1	6	12	50
Untested ...	$1.00	$ 5.50	$10.00	$38.00
Tested	1.25	6.50	12.00	45.00
Select Tested	2.00	10.00	18.00	65.00

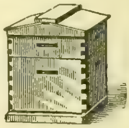
Pound packages of Bees.

	1	6	12	25	50
1 lb.	$1.50	$ 8.50	$16.00	$33.00	$ 65.00
2 lb.	2.50	15.00	29.50	58.00	115.00

Let us know your wants. Circular free.

Nueces Valley Apiaries . . . . . Calallen, Nueces Co., Texas





BEES and QUEENS

We wish to offer to the readers of "Gleanings" a chance to procure some of our fine stock of bees. Untested queens, March, April, May and June, $1.00 each, $5.00 for 6, $9.00 per dozen. Lots of 25 to 100, at 70 cents each. For larger quantities ask for prices. Best tested queens $2.00 each. Three races only—Three Band, Golden Italians, and Carniolans, reared in separate yards.

Bees by the pound in combless packages $1.50 per lb.; 5 to 10 lb. lots, $1.25 per lb. In lots of 25 to 100 lbs., $1.00 per lb. Safe arrival and reasonable satisfaction guaranteed. Our shipping facilities are good and promptness our motto.

THE CRESMER MANUFACTURING COMPANY, Bee Department, **Riverside, Cal.**

DOOLITTLE & CLARK

will have some choice breeding queens ready for shipment May 1. Prices: $2.50, $5, and $10.

Send for circular.

Marietta. Onondaga Co., N. Y.

Increase Your Honey Crop

by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested, each, $1; 6, $5. Tested, each $1.25; 6, $5.50. Breeders, $5.

FRED LEININGER & SON, Delphos, Ohio

ARCHDEKIN'S Fine Italian QUEENS and Combless Bees

April, May, June, queens, warranted purely mated $1.00 each, 6 for $5.00, doz., $9.00. Bees per lb. $1.25. With untested queen, $2.00 per lb. I have originated a package light, but strong. Saves you bees and express. My guarantee is prompt shipment, safe arrival, perfect satisfaction. No disease.

Small deposit books your order.

J. F. Archdekin, Bordlonville, Louisiana

In the Beginning is where Quality Starts

The Same Old Slogan for 1917

Untested Queens, $1; Tested, $2; Sel. Tested, $3

Deliveries begin early in May,
and orders filled in rotation.

Geo. W. Phillips, . . Lebanon, Ohio

CANDY

Bees sometimes starve with plenty of honey in the hive. Why not avoid this risk by placing a plate or two of candy on the frames when you pack for winter? It is a good life insurance. Send for circular also catalog of supplies.

H. H. Jepson, 182 Friend St., Boston, Mass.

Notice to Beekeepers

We are now booking orders for our 3-banded Italian queens and combless packages, and will furnish them during April, May, and June at the following prices:

Prices of Combless Packages Without Queens*

Size 1-lb. each	$1.35
Size 2-lb. each	2.35
Size 3-lb. each	3.35

Three-banded Italian Queens for April, May and June

Untested, each	$ 1.00	Tested, each	$ 1.50
Untested, 6	4.50	Tested, 6	8.00
Untested, 12	8.00	Tested, 12	15.00
Untested, 100	65.00	Tested, 100	100.00

Select tested, $2.00; breeders, $3.00

* In lots of over one dozen packages get our prices. If queens are wanted, add wholesale price and state kind.

We have just invented a new-style cage for shipping bees, for which patent has been applied. This cage allows the queen to lay while on the trip, which gives the purchaser from three to seven days' advantage of the old-style cage. It is almost equal to a colony of bees. With every order for 100 pounds of bees we will give one of these packages with a tested queen free. We have only one dozen of these cages, and will not put them on the market till 1918, as our stock of cages was made up before we evolved the new cage.

Our Mr. A. B. Marchant has retired from the production of honey and will manage our yards for the package and queen trade. Therefore, we will be in a better position to fill all orders with dispatch. Having doubled our capacity we believe we can fill all orders the day they are due. We have introduced new blood in all our yards, and we have a strain of bese second to none. Our packages are shipped the same day they are caged. Our bees for our packages are all reared above an excluder; therefore, we ship nothing but young bees, as young bees stand the trip better than older ones. We guarantee freedom from all diseases and safe arrival in the United States and Canada. Place your orders early, as first come first served. Write for prices on large orders.

Marchant Brothers, Union Springs, Alabama

Old Reliable Three-banded

ITALIAN QUEENS

Will book orders now. Untested Queens ready to mail April 1.

As I am located in the southern part of the state where we have an early spring, I can rear *Queens of High Quality* much earlier than most other breeders, and as I am a honey producer as well as a queen-breeder, I believe I am in a position to know the value of good queens. I have never had a case of foul brood in any of my colonies. If you want queens that are exceptionally vigorous and prolific, that produce bees that are gentle and the best of honey-gatherers, let me book your order. Will guarantee safe arrival in the United States and Canada. Send for free circular and price list.

Untested, $1.00; 6, $5.00; 12, $ 9.00
Tested, 1.25; 6, 6.50; 12, 12.50

JOHN G. MILLER
723 C St., Corpus Christi, Texas

QUEENS

Quirin's Improved Superior Italian Bees and Queens. They are Northern Bred and Hardy. . 25 Years a Queen-breeder.

PRICES	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested	1.00	5.00	9.00	.75	4.00	7.00
Tested	1.50	8.00	15.00	1.00	5.00	9.00
Select tested	2.00	10.00	18.00	1.50	8.00	15.00
2-comb nuclei	2.50	14.00	25.00	2.25	12.00	22.00
3-comb nuclei	3.50	20.00	35.00	3.25	18.00	32.00
8-frame colonies	6.00	30.00		5.00	25.00	
10-frame colonies	7.50	38.00		6.50	32.00	
1-2 lb pkg. bees	1.50	7.00		1.00	5.10	
1-lb. pkg. bees	2.00	10.00		1.50	8.00	

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders, $5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above price on bees by pound, nuclei, and colonies does not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Also nuclei and colonies, if wanted before June 1, add 25 per cent to price in table.

Breeders, select tested, and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now.

Reference any large supply dealer or any bank having Dunn's reference book.

H. G. Quirin, Bellevue, Ohio

Three-band and Golden Italians

The Secret of Success in beekeeping is to keep your colonies strong. To do this you must have good healthy laying queens.

Untested ...$ .75; 6, $4.25; 12, $ 8.00
Select unt... 1.00; 6, 5.00; 12, 9.00
Tested 1.50; 6, 8.00; 12, 15.00
Select tested.. 2.00

Safe delivery guaranteed. We solicit your order.

E. A. Simmons, Greenville, Ala.

Beginner's Book of 28 Pages, Free

Also our 44-page Bee-supply Catalog for 1917 is ready for mailing. Ask for your copy now.

OUR PRICES ON BEES AND QUEENS: 1 lb. of bees with queen, $2.25; 10 lbs. $20.50; 100 lbs., $190.00; 1 frame with queen, $2.00; full colonies, one-story hive included, $8.75; untested queens, 75c each. Our complete price list free, and safe delivery guaranteed

The Deroy Taylor Company, Newark, N. Y.

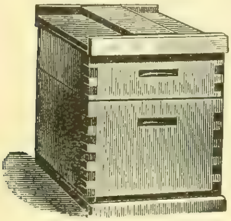
QUALITY BLANKE MARK

Blanke's BEE BOOK

This book describes our line of bee supplies. It contains much information valuable to the beekeeper.

We are centrally located. Shipments out of St. Louis will reach you promptly, and our long experience in this line enables us to fill your orders accurately. . . .
Write for Blanke's Bee Book—it's FREE.

BLANKE MFG. & SUPPLY CO.
214-216-218 Washington Avenue, St. Louis, Missouri

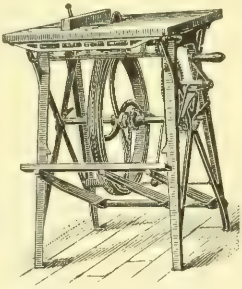


Early-order Discounts will

Pay You to Buy Bee Supplies Now

30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. . . .
Write for our illustrated catalog and discounts today.

Leahy Mfg. Co., 95 Sixth St., Higginsville, Missouri



BARNES'
Hand and Foot Power
Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices. Address

W. F. & JOHN BARNES CO.
545 Ruby St.
ROCKFORD, ILLINOIS

GRAY CAUCASIANS . . . . . .

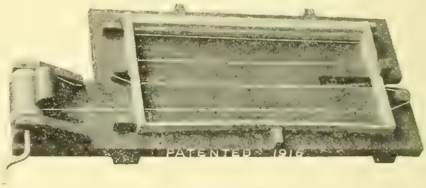
Early breeders; great honey-gatherers; cap beautifully white, great comb builders; very prolific; gentle; hardy; good winterers. Untested, $1.00. Select untested, $1.25. Tested, $1.50. Select tested, $2.00. The best all-purpose bee. Bees by the frame and pound.

H. W. FULMER, Box G, Andalusia, Pa.

Rhode Island BEEKEEPERS

Beekeepers' Supplies
Everything for the Beekeeper

J. A. Sampson, 10 Summer St., Providence, R. I.
(Side of Technical High School)



WRIGHT'S FRAME-WIRING DEVICE

Most rapid in use. Saves cost of machine in one day. Tighter wires; no kinks; no sore hands. Price, $2.50, postpaid in U. S. A.

G. W. Wright Company - Azusa, California

SWARMING CONTROLLED . . . . .

If interested, address Charles Thompson, Marion, Iowa, for information. . . .

ALWAYS ON TOP

Established 1885

It will pay you to get our 50-page catalog and order early.

Beekeepers' Supplies

The Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

"Griggs Saves You Freight"

TOLEDO

is the place to order your 1917 supplies from, and GRIGGS is waiting for your order.

We are well supplied with a fine stock of Root's Goods for the following season; and if a saving of time and money means anything to you, Mr. Beeman, wherever you are, don't overlook getting our catalog and prices.

Promptness and satisfaction is our motto, whether you have one hive or 500.

HONEY and Beeswax always wanted. Special price list on bees and queens, also Poultry Feeds, mailed with Catalogs.

S. J. GRIGGS & CO.
Dept. 25 Toledo, Ohio
"Griggs Saves You Freight"

QUEENS
For Sale

Red-clover 3-band Italian queens; Root's, Moore's, Davis', extra-select stock, mated with Geo. B. Hows' famous select drones. I know none better for honey-gathering, wintering, beauty, etc. I guarantee 90 per cent pure mated if queens are returned to me. Queens or money back in a reasonable time. No foul brood, no bee disease; apiaries inspected by Mr. Rea and Prof. Franklin Sherman, Jr. Mr. Rea is our bee inspector of this state.

	Price before July			After July 1st		
	1	6	12	1	6	12
Untested queen .	.75	4.00	8.00	.70	3.25	6.50
Select untested . .	1.00	4.50	8.50	.80	3.75	7.00
Tested	1.25	6.00	10.00	1.25	5.00	9.00
Select tested	1.50	8.00	13.00	1.50	6.00	10.00
Extra select tested	2.00	10.00	15.00	2.00	8.00	13.00
½ lb. bees with qn	2.00	10.00	16.00	1.75	8.00	14.00
1 lb. bees with qn	2.50	12.00	20.00	2.00	10.00	17.00

I can furnish bees in lots of 25, 50, and 100 pounds. I am in position to give prompt service this season. My bees are of a famous foul-brood-resisting strain.

H. B. Murray . . Liberty, N. C.

WHERE Can You Find Better

Bees than those of Dr. Miller's strain? Look at these prices and send us your orders. . Safe arrival and satisfaction guaranteed.

½-lb. package $1.50.
One to five 1-lb. packages, $2.00; 6 to 9, $1.70; 10 to 100, $1.60.
One to five 2-lb. packages, $3.00; 6 to 9, $2.70; 10 to 100, $2.60.
One to ten 1-fr. nuclei, $2 each; 10 or more, $1.85.
One to ten 2-fr. nuclei, $3 each; 10 or more, $2.60.
One to ten 3-fr. nuclei, $4 each; 10 or more, $3.60.
Full colony, 8 frame, $6.50; 10-frame, $7.50.

All prices include an untested queen. Ten per cent of the amount of order should be sent when asking us to book your order.

QUEENS from Dr. Miller's best breeders, $1.00; $11.00 per dozen. Tested, $2.00; select tested, $3.50; tested breeders, $5.00 to $10.00. Shipments from Starkville, Miss.

Stover Apiaries, Starkville, Mississippi

Italian Queens and Bees

I am better able to supply the trade with my three-band Italian queens, colonies, and nuclei than ever before. Send for circular and prices.

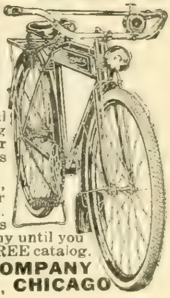
E. A. Leffingwell, - - Allen, Mich.

Reasonable Prices
Good Service

Place your order now—don't wait. Root's "Quality" Goods. I guarantee satisfaction. . . .

A. M. Moore
Zanesville, Ohio

Rider Agents Wanted



Everywhere to ride and exhibit the new **Ranger "Motorbike"** completely equipped with electric light and horn, carrier, stand, tool tank, coaster-brake, mud guards and anti-skid tires. **Choice of 44 other styles**, colors and sizes in the famous **"Ranger"** line of bicycles.

DELIVERED FREE on approval and **30 DAYS TRIAL.** Send for big **free** catalog and particulars of our *Factory-direct-to-Rider* marvelous offers and terms.

TIRES Lamps, Horns, Wheels, Sundries, and parts for all bicycles—at half usual prices.

SEND NO MONEY but tell us exactly what you need. Do not buy until you get our prices, terms and the big FREE catalog.

MEAD CYCLE COMPANY
Dept. B153, CHICAGO

TALKING QUEENS

Laws Queens Speak for Themselves

Please remember Laws' queens have stood the test of continuous advertising in this journal for this the 28th season. Thousands of customers have testified to the merits of Laws' bees and queens, and if there is a displeased customer I do not know it.

Untested will be ready in April; after which see the following table.

	April to June			June to November		
	1	12	100	1	12	100
Untested	$1.00	$ 9.00	$ 75.00	$ .75	$ 8.00	$ 65.00
Tested	1.25	10.00	85.00	1.00	10.00	75.00
Select Tested	2.00	18.00	120.00	1.50	15.00	100.00

Breeding queens: Guaranteed none better, at all times: each $5.00

Combless Bees **AFTER MAY 1st.**

1 lb. package, $1.50; 5 to 10 packages each, $1.25; 10 to 50 packages, $1.15
2 lb. package, 2.50; 5 to 10 packages each, 2.25; 10 to 50 packages, 2.15
3 lb. package, 3.50; 5 to 10 packages each, 3.25; 10 to 50 packages, 3.15

Price of queens to be added to above packages.

When 10 or more packages are bought, empty carriers to be returned at my expense.

My queens are all reared in full colonies, plenty of young bees and abundance of fresh honey in the hives. No other plan is so conducive to full-developed and long-lived queens.

My facilities are such that I can mail from 5000 to 6000 queens each season. Circular on application.

Purity of stock and safe delivery guaranteed to your express or post office on all bees and queens from my yards.

Address

W. H. Laws, Beeville, Bee Co., Texas

BEESWAX WANTED

You will save money and freight on your 1917 foundation by shipping us your beeswax and paying only for its manufacture into "SUPERIOR FOUNDATION" (Weed process).

SUPERIOR HONEY CO., Ogden, Utah

PENNSYLVANIA BEEKEEPERS

Our catalogs now out. Postal will bring you one. Root's goods at Root's prices. Prompt shipment.

E. M. Dunkel, Osceola Mills, Pa.

When Ordering Supplies

remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk. Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager

Money In *Your* Ideas

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Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

Clover and amber honey in new 60-lb. cans.
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FOR SALE.—To the highest bidder, a limited quantity of Michigan's best white extracted honey, in 60-pound tins.
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HONEY AND WAX WANTED

WANTED.—Extracted honey at jobbing prices. National Honey-Producers' Asso., Kansas City, Mo.

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Superior Honey Co., Ogden, Utah.

WANTED TO BUY a quantity of dark and amber honey for baking purposes.
A. G. Woodman Co., Grand Rapids, Mich.

HONEY WANTED. — Extracted, white, light amber, and amber of good quality. Can use several cars. Send samples and prices.
Wesley Foster, Boulder, Colo.

WANTED.—White-clover and light-amber extracted honey. Will buy in lots of 1000 lbs. to a carload. Send sample and lowest price.
M. E. Eggers, Eau Claire, Wis.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

HONEY LABELS.—Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Ct.

SEND TODAY for sample of latest Honey Labels. Liberty Pub. Co., Sta. D, box 4-E, Cleveland, Ohio.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—Circular-saw mandrels, and emery-wheel stands. Charles A. Henry, Eden, N. Y.

FOR SALE.—300 T tin supers in good condition.
J. A. Everett, Edgewater, Colo.

Full line of beekeepers' supplies. Send for catalog.
H. Greulich, Scotia, N. Y.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

Bargain in 8-frame comb-supers, hives and B-17 Cowan extractor. E. Bradley, Trenton, Ky.

We carry a complete line of bee-supplies. Ask for our bee-supply catalog. Let us quote you on your requirements. Deroy Taylor Co., Newark, N.Y.

Northwestern beekeepers can now get Root's supplies at catalog prices near home and save time and freight; also Italian bees and queens. Geo. F. Webster, Valley View Farm Apiary, Sioux Falls, S. Dak.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—A nice lot of 8-frame used hives, up-to-date fixtures for comb honey, 4000 new sections; heavy and light fdn., etc. I am out of the bee business, and will sell very cheap.
J. N. McColm, 1154 N. Cedar St., Galesburg, Ill.

FOR SALE.—Fifty new ten-frame hives with metal covers complete, with frames nailed and wired at $1.75 each, in lots of 25 or more at $1.50 each; also 50 ten-frame supers nailed and wired, hives and supers painted two coats, at 60 cts., each, for the supers; in lots of 25 or more 50 cts. each.
M. C. Silsbee Co., Cohocton, Rt. 3, Haskinville, N. Y.

WANTS AND EXCHANGES

WANTED.—50 ten-frame queen excluders in good condition. J. C. Hicks, Belleville, N. Y.

WANTED.—25 colonies of bees, more or less. 64989 George, 53 Forest St., Montclair, N. J.

WANTED.—Second-hand Novice Ext., cheap, cash. W. D. Loveland, Bangor, Mich.

WANTED.—Second-hand 4-frame L. size extractor.
Herm Kull, Trenton, Mo.

Wax and old combs wanted for cash or to make up on shares, beekeeper to factory direct.
J. J. Angus, Grand Haven, Mich.

WANTED.—Six-frame power extractor, small circular-saw combination for power; four-horse gasoline-engine. Dixon, Shellmouth, Manitoba, Can.
F-4172

WANTED.—Bees, 25 colonies or less. Give description and prices.
O. A. Dugstad, Spring Valley, Minn.

WANTED.—Bees in lots of 25 to 250 colonies within 300 miles of Detroit. Correspondence with full particulars solicited.
A. W. Smith, Birmingham, Mich.

WANTED.—Bees in modern hives, in New Jersey on line of Penn. R. R. or C. R. R. of N. J. State price, kind of hives.
T. Edward Diener, 28 Jacques St., Elizabeth, N. J.

WANTED.—Shipments of old comb and cappings, for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

GOATS

MILCH GOATS.—"Profit and Pleasure in Goat-Keeping," pronounced by experts the best goat book, regardless of price; profusely illustrated; by mail, 35 cents. Fred C. Lounsbury, Plainfield, N. J.

REAL ESTATE

FOR SALE.—Bees, residence, and land. Good offer. Inquire Rt. 1, Box 1, B, Aitkin, Minn. 41402

VIRGINIA AND NORTH CAROLINA FARMS, $15 PER ACRE and up. Easy payments. Fruit, dairy, stock, climate, schools, churches, road markets and neighbors of the best. Get our Farm Lists, Magazine, and other interesting literature, all free. Address F. H. Baume, Agr. Agt. N. & W. Ry., 246 N. & W. Bldg., Roanoke, Va.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free. C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

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ATTENTION—PATENTS. You will like my easy plan. Write for free booklet
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POULTRY

Cockerel mated barred Plymouth Rocks "Ringlet" direct. 15 eggs, $3. O. F. Ney, Waukon, Iowa.

S. C. Brown Leghorns; stock, eggs, baby chicks. Circular. H. M. Moyer, Boyertown, Pa.

FOR SALE.—Rose Comb Brown Leghorn eggs for setting from good winter and summer layers, and blue-ribbon stock; also penciled Indian Runner duck eggs. Eggs, $1.25 per 15; $3.50 per 50; $6.00 per 100. Joseph A. Reinecke, Rt. 5, Seneca, Kansas.

Beekeepers should be keepers of chickens also. Try winter-laying, prize-winning, 200-egg strain of White Wyandottes. Eggs, chix, and breeding stock for sale. Tell me how many you want, and when, then I will quote prices to please you.
Dr. Elton Blanchard, Youngstown, Ohio.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

Well-bred bees and queens. Hives and supplies.
J. H. M. Cook, 84 Cortlandt St., New York.

When it's GOLDENS it's PHELPS. Try one and be convinced.

Full colonies fine Italian bees at bargain prices. Write J. York Trigg, 811 Elm St., Dallas, Tex.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen.
C. F. Alexander, Campbell, Cal.

"She-suits-me," bright Italian queens, $1 after May 15. Orders booked now.
Allen Latham, Norwichtown, Conn.

Leffingwell's three-band Italians for the season of 1917. Send for circular and prices.
E. A. Leffingwell, Allen, Mich.

Vigorous, prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing.
A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Phelps' queens will please you. Try them and you will be convinced.

Italian bees and queens. Send for circular.
Ira C. Smith, Dundee, Oregon.

Italian Bees and Queens, Root's goods, and Cary hives. Catalog mailed on request.
F. Coombs & Sons, Brattleboro, Vt.

Italian bees, 2 lbs. with young queen, $3.00. Satisfaction guaranteed.
Joe C. Weaver, Cochrane, Ala.

150 colonies of bees, good condition, fine sweet-clover location. Equipment for 350 more.
C. F. Randolph, Idaho Falls, Idaho.

FOR SALE at a bargain.—7 colonies of bees, 2-story Dovetailed hives; 10 Hoffman frames to story. For particulars write S. H. Terral, Kentwood, La.

Tested leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

FOR SALE.—Bees in 9-frame hives, $6.00; in 10-frame hives, $7.00; Hoffman frames, wired, full sheets of foundation. Julius Gentz, Wabeno, Wis.

FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, $1.00; tested, $2.00.
Wallace R. Beaver, Lincoln, Ill.

FOR SALE.—100 colonies in 10-frame hives, Golden Italian bees, mostly J. L. Strong's strain of queens. I am on a city lot—too many bees; must sell some of them. Geo. Landers, Clarinda, Ia.

FOR SALE.—Bright Italian queens at 75 cts. each; $7.50 per doz. Ready April 15. Safe arrival and satisfaction guaranteed.
T. J. Talley, Rt. 3, Greenville, Ala.

FOR SALE.—40 colonies of bees in 8-frame hives, wired frames; straight combs, no disease; $140 on stands; must sell in bulk.
Clyde Stewart, Brookville, Pa.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1; 6 for $5. Wm. S. Barnett, Barnetts, Va.

FOR SALE.—25 colonies of Italian bees, frames wired, combs built on full sheets of foundation; 8-fr. colonies, $6; 10-fr., $7 with queen.
Henry Shaffer, 2860 Harrison Ave., Cincinnati, O.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each.
Henry S. Bohon, Rt. 3, box 212, Roanoke, Va.

FOR SALE.—Ten colonies Italian bees in Buckeye double-walled hives, all in first-class condition. New queens introduced last fall; $10.00 per colony.
Keewaydin Farms, Gates Mill, Ohio.

My 3-banded Italian queens will be ready to ship April 1. Write for prices of bees and queens by the pound. Safe arrival and satisfaction guaranteed.
J. A. Jones, Greenville, Ala.

FOR SALE.—Italian queens and bees in combless packages; safe delivery and satisfaction guaranteed in all respects. Write for prices.
Oscar Mayeux, Hamburg, La.

QUEENS ON APPROVAL.—A select tested queen sent on approval. Send address for description, etc. Bees and supplies for sale.
A. M. Applegate, Reynoldsville, Pa.

BUSINESS-FIRST QUEENS. — Three - banded Italians—untested, $1.00 each; 6 for $5.00. Send for price list and $10 free offer. No disease.
M. F. Perry, Bradentown, Fla.

Select golden and three-banded Italian queens, bred for honey-gatherers; gentle and prolific; 70 cts. each; 6, $3.75; 12, $7.25. Booking orders now.
G. H. Merrill, Pickens, S. C.

FOR SALE.—25 colonies Italian bees in 10-fr. hives, wired frames; combs built on full sheets of foundation; no disease; $4.50 per colony; purchaser to move them. J. B. Ratcliffe, Amboy, Minn.

Swarms in packages, also Italian queens, can be had—the kind that will increase your smiles and your bank account from W. D. Achord, of Fitzpatrick, Ala. See his large ad't elsewhere in this magazine. Circular to you for the asking.

FOR SALE.—Italian bees and queens. One-pound, two-pound, and three-pound packages, with queens; also on frames and full colonies. Ask for our price list, free beginner's book, and bee-supply catalog.
Deroy Taylor Co., Newark, N. Y.

My bright Italian queens will be ready to ship April 1 at 75 cts. each; virgin queens, 30 cts. each. Send for price list of queens, bees by the pound; safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

Two-frame nuclei, 3-band Italian bees, $2.25; 1 lb. bees with queen, $1.65. Hoffman brood-frames, wired, and foundation, at catalog prices less carriage, if ordered for parcel post. J. B. Marshall & Son, Rosedale Apiaries, Big Bend, La.

My bright Italian queens will be ready to ship April 1, at 60 cts. each: virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, $1.00; 6, $5.00; tested, $2.00; breeders, $5.00 to $10.00.
J. B. Brockwell, Barnetts, Va.

FOR SALE.—29 stands Italian bees—strong healthy colonies; eight and ten frame dovetailed hives; also extra hives, supers, feeders, and a complete list of implements. These go at a bargain.
J. F. Drebert, Boomer, W. Va.

Golden Italian queens about May 1, that produce golden bees; good honey-gatherers. No foul brood. Select tested, $1.25; tested, $1.00; untested, 75 cts.; 6, $4.25; 12, $8.00. No nuclei or bees for sale.
D. T. Gaster, Rt. 2 Randleman, N. C.

TO INQUIRERS.—I sell no queens directly, but have an arrangement with The Stover Apiaries, Starkville, Miss., which I keep supplied with best breeders, and they can supply you with my stock.
C. C. Miller, Marengo, Ill.

QUEENS.—Best Italians, 50 cts. each; $5.50 per dozen. Virgins, 25 cts. each; $2.75 per doz. Orders taken now, queens sent out in May. Any of my queens proving mismated, replaced free.
A. F. Bray, Rt. 2, Kelso, Tenn.

FOR SALE.—Mott's northern-bred Italian queens are hardy, prolific, gentle, and hustlers, therefore resist disease well. Bees by pound. Plans, "How to Introduce Queens and Increase," 25 cts. List free. E. E. Mott, Glenwood, Mich.

Head your colonies with some of our vigorous young three-band Italian queens. Untested, June 1, $1.00; $9.00 per doz.; nuclei and full colonies. Satisfaction guaranteed.
A. E. Crandall & Son, Berlin, Conn.

FOR SALE.—Three-banded Italian bees and queens. One untested queen, $1.00; tested, $1.50; 3-frame nucleus with untested queen, $4.00. My queens are reared from the best breeders and by the best known methods. No diseases. Satisfaction guaranteed. Ask for prices on larger quantities.
J. L. Leath, Corinth, Miss.

QUEENS, Doolittle and Moore strain, also Goldens that are Golden. 1 select unt., $1.00; 6, $4.25; 12, $8.00; tested, $1.25. Best breeder, $5.00.
Bees by the pound a specialty. One 1-lb. package $1.25; one 2-lb., $2.25; large lots less; also nuclei and colonies. Ready March 15. Booking orders now. Circular free.
J. E. Wing, 155 Schiele Ave., San Jose, Cal.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

FOR SALE.—1000 lbs. bees in 2-lb. packages; 1 to 49, 2 lbs. bees in package, $2.25 each; 50 to 500, 2 lbs. bees in package, $2.12½ each. Untested Italian queens, 75 cts. extra. Safe arrival guaranteed. H. E. Graham, Gause, Texas.

FOR SALE.—100 first-class colonies of bees in 8 and 10 frame hives. Price $475. I will also sell single colonies in 8-fr. hives at $6.00 or 10-fr. at $7.00 with queens; 2-fr. nucleus, $2.50 with queen.
C. A. Gaines, Versailles, Ky.

BREEDING QUEENS.—We shall have a nice lot of Italian queens for sale this spring. They have wintered fine. Prices, $2.50, $5, and $10. Untested queens about June 15.
Doolittle & Clark, Marietta, N. Y.

Golden Italian queens, bred strictly for business, that produce a strong race of honey-gatherers; untested queens 75 cts. each; $8.00 per dozen: $60.00 per 100; tested, $1.50 each. Prompt service and satisfaction guaranteed.
L. J. Dunn, 59 Broadway Ave., San Jose, Cal.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; doz., $9.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Son, Wilcox St., Binghamton, N. Y.

GOLDENS THAT ARE TRUE TO NAME.—Write for testimonials. One race only. Unt., each, 75c; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60.00. Tested, $1.50; select tested, $2.00. Breeders, $5.00 and $10.00.
Garden City Apiaries, San Jose, Cal.

My choice northern-bred Italian queens are hardy, vigorous, and prolific. May and June, untested, $1.50; select unt., $2.00; tested, $3.00; after July 1, unt., $1.00; select unt., $1.25; tested, $2.00; select tested, $2.50. Free circular.
F. L. Barber, Lowville, N. Y.

FOR SALE.—190 colonies of bees in A No. 1 hives and condition; 100 extracting-supers with 800 drawn combs that are perfect; 130 comb-honey supers; all tools and equipment necessary for running the same; $960 takes the outfit if taken at once. Address J. E. Hanks, Hagerman, Idaho.

Golden Italian queens of the quality you need, bred strictly to produce Golden bees that are real workers. Untested; one, 75 cts.; 6, $4.25; 12, $8.25; 50 or more, 60 cts. each. Prompt delivery and satisfaction guaranteed.
L. J. Pfeiffer, Rt. A, Box 219, Los Gatos, Cal.

FOR SALE.—130 colonies Italian bees, new swarms, new ten-frame metal-top dovetailed hives painted; straight combs, wired frames, no disease; $10 each. Safe arrival guaranteed. Delivery about May 10. Write for particulars. Express prepaid in lots of 5 or more. S. H. Burton, Washington, Ind.

Good Italian queens. Tested, $1.00; untested, 75 cts. Bees in 1-lb. packages, with untested queen, $2.25; 2-lb. package, $3.25; 1-lb. package, with tested queen, $2.50; 2-lb. package, with tested queen, $3.50. Nuclei, 2 frames, with untested queen, $3.25; 3 frames, $4.00. Nuclei with tested queen, 2 frames, $3.50; 3 frames, $4.25. We can please you.
G. W. Moon, 1904 Park Ave., Little Rock, Ark.

Three-banded queens only, ready after May 1. Dr. C. C. Miller queens, $1.00 each; 12 for $10.00; breeders, $10.00 each; my own strain, $1.00 each; 12 for $9.00; breeders, $5.00 to $10.00 each; nuclei and full colonies ready June 1; 2-fr., $2.50; 8-fr., with queen, $8.00; 10-fr., with queen, $10.00; 1-lb. package of bees, no queen, $1.50; 2-lb., no queen, $2.75; 3-lb., no queen, $3.75. Pounds of bees and queens ready April 1.
Curd Walker, Queen-breeder, Jellico, Tenn.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money returned by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

BEES FOR SALE.—On account of the poor health of one of my sons, we shall have more bees the coming season than we can handle. The bees are all pure Italian, with good young queens—descendants of the famous Moore strain. They are in nearly new Langstroth hives, on good wired combs, built on foundation; are free from disease. I will sell about 100 colonies, price in 10-frame hives, $7.00 a colony; in 8-frame hives, $6.00. Orders may be sent at any time; the bees will be shipped about June 1. Elmer Hutchinson, Lake City, Mich.

Golden 3-band Italian and Carniolan queens: Virgin: 1, 50c; 6, $2.50; 12, $4.00; 100, $25.00. Untested: 1, 75c; 6, $4.20; 12, $7.80; 100, $60.00. Select untested: 1, 85c; 6, $4.80; 12, $9.00; 100, $70.00. Tested: 1, $1.00; 6, $5.40; 12, $10.20; 100, $80.00. Select tested: 1, $1.25; 12, $13.80; 100, $100. Breeders: $3.00 each. Bees in combless packages: ½ lb., 75c; 1 lb., $1.25; 2 lbs., $2.25. Nuclei: 1-frame, $1.25; 2 frames, $2.25; 3 frames, $3.00. Add price of queens wanted. We guarantee safe arrival and no disease.
C. B. Bankston, Buffalo, Tex.

FOR SALE.—Three-band Italian bees and queens. We quote without queen, as follows:—Three-frame nuclei, $2.25; two-frame nuclei, $1.75; one-frame nuclei, $1.25; three pounds bees, $3.25; two pounds bees, $2.25; one pound bees, $1.50. If queen is wanted with bees add price of queen wanted. Young untested queens, $.75; young tested queens, $1.00. Our bees and queens last year gave general satisfaction, and this year we are in position to give stronger nuclei with a greater per cent brood than we did last year. If it is a bargain you are looking for, send your order this way. Send your orders now and money when you want them shipped. Can begin shipping April 15. Bees are all in standard hives, Hoffman frames, wired, and full sheets foundation. We guarantee bees to be free from disease. The following is an extract from one of our many satisfied customers. "Aug. 16, today, I hived the second large swarm from the colony I started from a three-frame nucleus I bought from you in June and have about 40 lbs. surplus honey on hive. It pays to keep well-bred stock, whether it is cattle or bees." (Name furnished on application.)
The Hyde Bee Co., Floresville, Texas.

MISCELLANEOUS

BASSWOOD TREES—All sizes. Send me your want list. W. M. Hansen, Jr., Niles, Mich.

Quality Dahlias (northern grown). Send for catalog. Mrs. E. L. G. Davis, Rt. 2, Newton, N. H.

Send 20 cts. in stamps and receive a collection of 15 Atlantic City and seashore colored post cards.
31802 Box 224, May's Landing, N. J.

How to make and operate a little printing-press at small cost. Send red stamp for sample.
J. M. Smithson, Mancos, Colo.

St. Regis Everbearing raspberry. Pedigree plants, 1 doz., 35 cts.; 2 doz., 50; 6 doz., $1.00, prepaid; also strawberry, Progressive, Everbearing; pedigree; raspberry price.
L. H. Cline, Box 334, Marietta, Ohio.

HELP WANTED

Man wanted to work on a small farm and with bees. S. Stewart, Newcastle, Colo.

WANTED.—Experienced beeman for season of 1917. Roscoe F. Wixson, Rt. 20, Dundee, N. Y.

WANTED.—Two men to work with bees the coming season; must have some experience.
B. B. Coggshall, Groton, N. Y.

WANTED.—Man to work with bees, season 1917. State age, experience, and wages.
The Rocky Mountain Bee Co., Billings, Montana.

WANTED.—Active young man as helper; also one to run outyards. State age, experience, and wages expected. Chas. Adams, Greeley, Colo.

HELP WANTED.—Man of good habits to work with bees. State age, experience, and wages.
J. B. Merwin, Prattsville, N. Y.

WANTED.—Position on farm, preferring farm with bees, poultry, or fruit, by young man of good character, some experience.
I. H. Lindquist, Garden City, L. I., N. Y.

WANTED.—Reliable man of good habits to work my home apiary and small farm. State age and wages first letter.
Mrs. H. C. Ahlers, Rt. 1, Box 11, West Bend, Wis.

WANTED.—To work bees on shares for extracted honey within 150 miles of Chicago; modern methods; 20 years' experience. F., in care of A. I. Root Co., 215 W. Ohio St., Chicago. 17787

WANTED.—An active young man of good habits to help in three beeyards, and on fruit-farm. Auto used. Some work for a woman. State experience, height, weight, age, and wages in first letter.
Mrs. S. Wilbur Frey, Rt. 1, Sand Lake, Mich.

EXPERIENCED MANAGING BEEMAN wanted to handle bees on shares in Ozark Mountains, Ark. We furnish bees, also house, garden spot, farm-home privileges, and work on farm when not engaged with bees. Can also raise unlimited quantity of chickens if he desires. Owner away for health.
C. W. Riggs, 502 Jackson St., Tampa, Fla.

WANTED.—Young man with a little experience, fast willing worker, as student helper with our 1000 colonies. Crop for past two years, 6 carloads. Will give results of our long experience and small wages; every chance to learn. Give age, height, weight, experience, and wages, *all* in first letter, or expect no answer. E. F. Atwater, Meridian, Idaho.

WANTED.—Experienced farm hand to assist with farm work and 100 colonies of bees. No experience with bees necessary, but will give every opportunity to learn. Up-to-date methods all around. Only willing hands of clean body and mind need apply. State all particulars first letter.
Conrad Kruse, Loganville, Sauk Co., Wis.

Two young men can, during the season of 1917, reap the benefit of my experience for nearly forty years with up to 800 colonies of bees; also as public demonstrator with bees and lecturer and expert in beekeeping at the Ontario Agricultural College. One with clean body and mind required. Board; and, if the season is good, a little more given.
R. F. Holtermann, Brantford, Ontario, Canada.

SITUATION WANTED

WANTED.—Position in an apiary with opportunity of buying or partnership.
E. Paillard, 165 Third Street, San Francisco, Cal.

WANTED.—Position in apiary in the West by a rural-school teacher, 22 years of age, with three years' experience with bees. $50 a month with board. References exchanged.
Buryl Cummins, Rt. 5, Plymouth, Ind.

Position wanted by young man; experience of 8 years in large outyards—N. M. or Pacific coast preferred. References. State wages; how long you can use me, and number of colonies.
71932 A. M., Box 84, Crystal City, Texas.

Position wanted by young man of 18 with some practical beekeeper in Wisconsin or nearby states. Has no bad habits; a fast and willing worker about bees; has had some practical experience with bees in the production of comb and extracted honey, also in the rearing of queens. State what wages you will pay and what knowledge may be gained.
J. O. Eggers, Eau Clere, Wis.

TRADE NOTES

BEESWAX MARKET.

The market price of beeswax continues firm. We have secured during the past month or six-weeks some over thirty tons, and shall need in addition during the next three months as much more. As the spring months open, supplies should be more plentiful, especially so if there should be a considerable loss of bees by winter-killing. If you have any wax to offer, let us hear from you. In shipping beeswax, whether by mail, express, or freight, be sure to put your name and address on or in the package so securely that there can be no trouble in identification on arrival. Also write to us, stating the amount sent, and how. If possible give the gross weight as well as the net. In case it reaches us in bad order it is much easier to put in a claim for loss if we have full information at time of arrival. If you send small lots by parcel post put in a cloth sack; or, if wrapped in paper, use something very strong, and several thicknesses, with strong cord. We are constantly receiving lots broken open and so poorly put up it is hard to identify the lot or determine who the sender is. Be careful, and save trouble for us and you.

ADVANCE IN PRICE OF METAL GOODS.

Because of the continual rise in price of metals, especially everything in steel and iron, we are obliged to announce a further increase in prices of metal goods. Most of these changes will not be made till May 1, so that, if you contemplate ordering, you have a chance to do so before advances go into effect. This applies particularly to honey and wax extractors, tanks, capping-cans, tin cans, pails, and other articles of metal.

We are obliged to make an advance effective at once on a few goods as follows: Eight and ten frame unbound zinc honey-boards are advanced 4 cts. each, or $4.00 per 100; retail wholesale and jobbing. Sheet zinc advanced to $4.00 per sheet.

Alexander honey-strainer is advanced to $4.50; oil and gasoline stoves, one and two burner, all advanced 50 cts. each. Townsend uncapping-box is marked up to $20.00.

Comb-foundation mills are again marked up to the following schedule:

69511—14-inch mill,	2½-inch rolls,	$120.00
69512—12-inch mill,	2½-inch rolls,	110.00
69513—10-inch mill,	2½-inch rolls,	100.00
69514— 6-inch mill,	2½-inch rolls,	100.00
69515—10-inch mill,	2 -inch rolls,	90.00
69516— 6-inch mill,	2 -inch rolls,	80.00
Dipping-tank for 12 or 14 inch mills		$5.00
Dipping-tank for 6 or 10 inch mills		4.00

ONE-POUND ROUND JARS.

Due to conditions brought about by the great war, there is increasing difficulty in securing glass packages of all kinds, and prices are advancing at such a rate that, notwithstanding the fact that we buy more than twenty carloads a year, we are now asked about fifty per cent more than we paid a year and a half ago, and we have to wait for months to get the goods ordered. We have applied to at least a dozen factories, and are unable to find one which will take on new business. In the face of this condition we have secured at Alton, Ill., nearly three carloads of jars holding an even pound of honey, as shown above. They have lacquered tin tops with wax-paper wads; are put up in two dozen paper reshipping-cases. For such orders as we can ship at once before May in lots of 30 cases or more we offer them at 85 cts. per case; 100-case lots at 80 cts. After the stock has been shipped to our Des Moines, Chicago, and St. Paul branches the price will be $1.00 per case; 6 cases or over, 95 cts. The special price named above is only for immediate orders for shipment direct from Alton, Ill., before stock is moved from there. We must order the stock from there by early May, hence it is important that you order promptly if you would secure any at the special price. For less than 30 cases, not less than 6, the price is 90 cts. a case.

THE 1917 EDITION OF THE A B C AND X Y Z OF BEE CULTURE BEING DELIVERED.

We are happy to announce to our readers that we have finally completed the 1917 edition—the largest work on bees ever published. This edition is over 100 pages larger than the former one; and this increase in size, together with the extra cost of paper, makes it necessary for us to charge $2.50 instead of $2.00 as before, or with GLEANINGS one year for $3.00. If there ever was an edition of the A B C and X Y Z that was new from cover to cover, this is the one. Every article has been gone over carefully. A large number of them have been rewritten entirely; a much larger number have been very extensively revised, and these, together with new subjects that never appeared before, make the A B C and X Y Z of Bee Culture just what its name signifies—a work on bees from beginning to end, and a work for beginners and for veterans.

SWEET-CLOVER SEED.

In closing out our seed department we have a number of odd lots of seed which we offer at bargain prices. We have at Chicago about 128 lbs. hulled white-sweet-clover seed; 465 lbs. unhulled yellow, and 85 lbs. hulled yellow biennial at Des Moines, Iowa; several hundred pounds each of unhulled yellow and white and of hulled white. At Medina we have several hundred pounds of hulled and unhulled yellow biennial and a good lot of hulled annual yellow. We offer the several kinds to close out at the following prices which are away below cost:

Hulled white	18c lb.;	$15.00 per 100 lbs.
Unhulled white	10c lb.;	8.00 per 100 lbs.
Hulled yellow	15c lb.;	12.00 per 100 lbs.
Unhulled yellow	9c lb.;	7.00 per 100 lbs.
Annual yellow	6c lb.;	3.00 per 100 lbs.

We have also several hundred pounds of alfalfa and white sweet clover, mixed a little more than half alfalfa. We offer this at $8.00 per 100 lbs., which is about half the price of clean seed of either variety not mixed. Sweet clover is often used to prepare the ground for alfalfa. As the sweet clover is a biennial, while the alfalfa is perennial, there would be no serious disadvantage in sowing the mixed seed. This lot is none too clean. If interested we will mail a sample on application to Medina.

THE A. I. ROOT CO., Medina, O.

CONVENTION NOTICES

NORTH CAROLINA BEEKEEPERS' ASSOCIATION.

The organization meeting of the North Carolina Beekeepers' Association was held at Winston-Salem, January 11. Over 100 state beekeepers attended, these owning upward of 3000 colonies of bees. Dr. E. F. Phillips, of Washington, and Mr. E. R. Root, of Medina, Ohio, were both present and took part. There were also other visitors from Pennsylvania and Ohio. Interest was keen, and the whole meeting went thru with enthusiasm.

All discussion was in favor of a state association. Committees were accordingly appointed, which reported at the evening session, when a constitution was adopted, and officers elected as follows: President, F. Sherman, Raleigh; Vice-president, C. A. Sams, Mars Hill; Secretary-Treasurer, S. S. Stabler, Salisbury; Executive Committee, the three named, and F. L. Johnson, Mount Airy, and W. C. Fleming, Greensboro. Dues were fixed at one dollar per year.

The association already has 48 members without having yet canvassed all the known beekeepers of the state. It is already in position to offer some real advantages to members. All North Carolina readers of this notice are invited to become members by sending one dollar (with name and address plainly written) to Mr. S. S. Stabler, Salisbury, N. C.

Either the president or the secretary will be glad to correspond with interested persons.

WHO'S WHO IN APICULTURE

In this first appearance of "Who's Who in Apiculture," the editors wish to announce that this feature is to be a permanent policy of Gleanings. It will not appear in every issue, however, but will occur hereafter four times a year in the January, April, July, and October issues. In looking over the table it is interesting to note that at least twenty states have courses in apiculture. Three of the others probably have such courses, altho we could not be sure at the moment of going to press. Twenty-four states have net-weight laws, twenty-nine have foul-brood laws, and thirty-four have state associations.

No doubt, as time goes on, this table can be improved upon. It would be interesting to have a column, giving the names of those in charge of apicultural courses and no doubt additional columns will suggest themselves. We realize that discrepancies may have been made. It is not an easy matter to compile such a table when changes are being made so frequently, but having once started we shall depend upon our readers, if not on the ones directly concerned, to keep us posted of any changes or corrections. Our aim and desire is to have each quarterly table as up-to-date and as correct as possible, so that any one at any time can turn to the last quarterly number and get correct information regarding the statistics in his own state. We hope that our readers will avail themselves of the information given in this way so that "Who's Who in Apiculture" may become a valuable adjunct to our pages.

State	Beekeeping taught in Agr. College	Net Weight Law?	Foul-brood Law?	State Inspector or Deputy Name Address	Sec. or Pres. State Ass'n Name Address
Alabama..........					
Arizona..........	Yes	Yes	Yes	J. P. Ivy, Phoenix..........	Geo. M. Frizzell, Tempe
Arkansas.........					J. L. Pelham, Hutchinson
California........	Yes	Yes	Yes	County System.............	F. Fay Lewis (No.) Oak Park M. C. Richter, Santa Barbara
Colorado.........			Yes	Wesley Foster, Boulder......	S. Francis, Longmont
Connecticut.......		Yes	Yes	H. W. Coley, Westport...... A. W. Yates, Hartford......	L. Wayne Adams, Hartford
Delaware.........					
Florida...........		Yes			
Georgia..........		Yes			J. J. Wilder, Cordele
Idaho............	Yes		Yes	Guy Graham, Boise.........	R. D. Bradshaw, Notus
Illinois...........			Yes	A. L. Kildow, Putnam......	Jas. A. Stone, Springfield
Indiana..........		Yes*	Yes	Frank Wallace, Indianapolis..	Geo. W. Williams, Redkey
Iowa............	Yes	Yes*	Yes	Frank C. Pellett, Atlantic....	Hamlin B. Miller, Marshalltown
Kansas...........	Yes		Yes	Geo. A. Dean, Manhattan (No.) S. J. Hunter, Lawrence (So.)	O. A. Keene, Topeka
Kentucky.........			Yes	County System.............	Prof. H. Garmen, Lexington, State Exp. Station
Louisiana.........		Yes			L. F. Rogers, Shreveport
Maine............		Yes			O. B. Griffin, Caribou
Maryland.........	Yes				E. N. Cary, College Park
Massachusetts.....	Yes	Yes	Yes	Dr. B. N. Gates, Amherst....	Thos. J. Hawkins, (E.) Everett Philip S. Chrichton, Boston
Michigan.........	Yes	Yes	Yes	F. Eric Millen, East Lansing..	F. Eric Millen, East Lansing
Minnesota........	Yes		Yes	C. D. Blaker, Minneapolis....	L. V. France, St. Paul
Mississippi........					
Missouri..........	Yes		Yes	M. E. Darby, Springfield.....	Austin D. Wolf, Parkville
Montana.........	Yes	Yes			Percy F. Kolb, Billings
Nebraska.........	Yes	Yes	Yes	County System.............	
Nevada...........		Yes			
New Hampshire...		Yes			
New Jersey.......	Yes		Yes	E. G. Carr, New Egypt......	E. G. Carr, New Egypt
New Mexico.......			Yes	County System.............	Henry B. Barron, Hagerman
New York........	Yes	Yes	Yes	Com. of Agri., Albany.......	F. Greiner, Naples
North Carolina....					S. S. Stabler, Salisbury
North Dakota.....		Yes			
Ohio.............	Yes		Yes	N. E. Shaw, Columbus......	Dr. Ernest Kohn, Grover Hill
Oklahoma.........	Yes				F. W. VanDeMark, Stillwater
Oregon...........	Yes				P. S. Farrell, New Plymouth, Ida.
Pennsylvania......	Yes	Yes	Yes	J. G. Sanders, Harrisburg...	H. C. Klinger, Liverpool
Rhode Island......			Yes	A. C. Miller, Providence.....	Gardner B. Willis, Providence
South Carolina....					
South Dakota.....		Yes	Yes?	District System............	L. A. Syverud, Canton
Tennessee.........	Yes	Yes	Yes	F. B. Paddock, College Sta....	J. M. Buchanan, Franklin
Texas.............	Yes		Yes	J. S. Ward, Nashville........	Louis Scholl, New Braunfels
Utah.............		Yes	Yes	County System.............	Joah Collier, Vernol
Vermont..........			Yes	J. E. Crane, Middlebury.....	J. E. Crane, Middleburg
Virginia..........					
Washington.......			Yes	County?	J. B. Ramage, No. Yakima
West Virginia.....		Yes			Pan Handle, B. K. A.
Wisconsin........	Yes	Yes	Yes	N. E. France, Platteville.....	Gus Ditmer, Augusta
Wyoming.........		Yes	Yes	County System.............	
Ontario, Can......	Yes		Yes	Morley Pettit, Guelph........	Morley Pettit, Guelph

* Comb honey excepted.

Advance in Price

of all metal goods, including Honey-extractors, Honey-tanks, Capping-melters, Wax-presses, Honey-knives, Boilers, Stoves, Excluders and Honey-boards, Sheet Zinc, Strainers, Cans and Pails, Glassware, etc.

Only 30 Days Left

in which to buy the above supplies at present prices. On account of the great advance in price of all raw metals, we will be forced to raise our prices on the above items 10 per cent or more. If you get your orders in immediately, you will protect yourself against this advance in price. Revised prices effective May 1.

Comb foundation has already advanced 5 cts. per pound. If you have any beeswax to sell for cash or trade for supplies, write us at once. We will pay highest prices for wax delivered to any of our branches.

The A. I. Root Company
Medina, Ohio

New York
Chicago
Philadelphia
Des Moines
St. Paul

Los Angeles
San Francisco
Indianapolis
Syracuse
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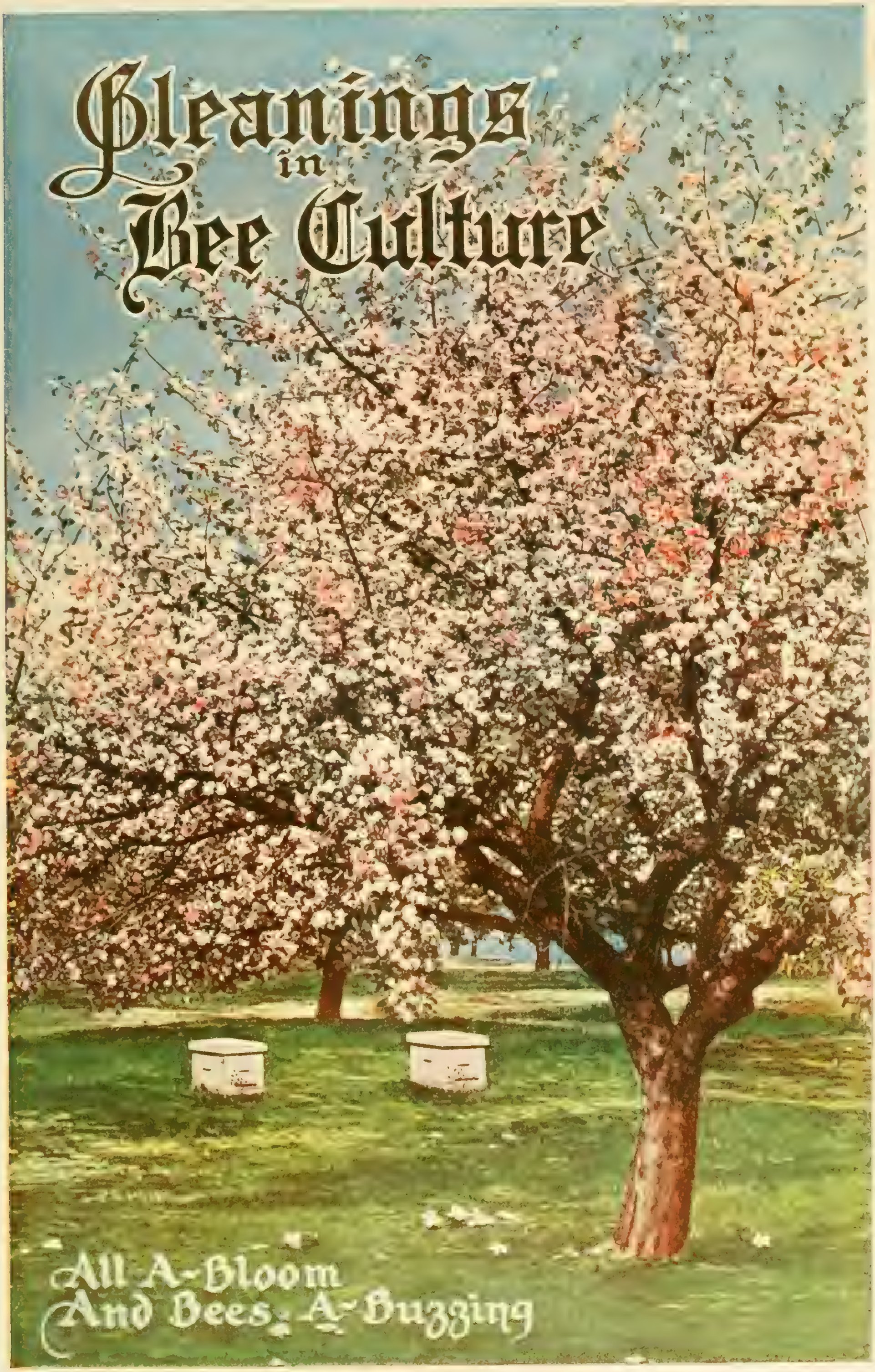
All A-Bloom
And Bees A-Buzzing

Vol. XLV May, 1917 No. 5

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you SPOT CASH for any thing you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.
633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

ALL QUEENS SOLD TO JUNE 1 . . . After that we supply them at

Untested,	1, $ .75	12, $8.00	100, $60.00
Tested,	1, 1.25	12, 12.00	100, 90.00
Select Tested,	1, 2.00	12, 20.00	

We can supply either the imported or domestic strain of the three-banded Italian.
Neither can be beaten. Write for circular telling more about them.
Pure mating, safe arrival, and satisfaction guaranteed.

R. V. Stearns, ... Brady, Texas

Southern Headquarters for Three-banded Italian Queens

To supply the increasing demand for our queens we are now running nearly twice as many mating boxes as last year, and six times as many as six years ago. We spare neither labor nor money to produce the very best that can be had. We are careful about our breeders for producing our queens and drones. We use the best methods to produce the best queens.

Untested queens, ... May, 1, $ .75; 100, $ 75.00. June, 1, $ .75; 12, $ 8.00; 100, $ 60.00
Tested queens . . . . . . May, 1, 1.25; 100, 125.00. June, 1, 1.20; 12, 14.00; 100, 115.00
Select tested queens. . May, 1, 2.00; 100, 200.00. June, 1, 1.90; 12, 22.00; 100, 180.00

Very best queens for breeders, $3.00 each.

If any of our untested queens prove to be mismated we are willing to replace them free of charge. No foul brood has ever been in our vicinity. Safe arrival and satisfaction I guarantee.

W. D. Achord, Fitzpatrick, Alabama

CONTENTS

MAY, 1917

Editorial 329
Bees and Fruit Together .... E. R. Root 332
Destructive Spraying .... Lewis P. Tanton 335
Comb Honey—Few Swarms .... Mrs. S. Wilbur Frey 336
400 Colonies Cared for in Two Days a Week .... E. S. Miller 339
Conversations with Doolittle .... G. M. Doolittle 343
Letters from a Beekeeper's Wife .... "Mary" 344
The Purpose of Laying-worker Drones .... W. J. Purvis 345
Painting Hive-bottoms .... J. A. Simmons 346
Moving by Auto .... F. J. Severin 347
Superseding During a Honey-flow .... A. C. Gilbert 347
A Profitable City Apiary .... C. B. Isaac 349
The Cause of Swarming .... P. C. Chadwick 350
My Folder and Foundation-fastener .... Floyd Markham 351
The Shaken-swarm Plan Perfected .... E. F. Atwater 352
Comb and Extracted Plans, Similar .... J. H. Fisbeck 353
How Young Queens Help .... Ray D. Tait 354
Can Bees be Kept in an Attic .... John Preston True 355
Clipped Queens that Lived to a Good Old Age .... J. W. Nichols 356
Stray Straws .... Dr. C. C. Miller 357
Siftings .... J. E. Crane 359
Beekeeping as a Side Line .... Grace Allen 360
Our Food Page .... Stancy Puerden 362
Beginners' Lessons. No. 4 .... H. H. Root 364
Around the Office .... M. A. O. 366
Mother Bee Nursery Rhymes .... M. G. P. 367
Can This be Done? .... The Editors 369
Just News .... The Editors 370
Gleaned by Asking .... E. R. Root 374
Gleanings from the North, South, East and West .... Dept. Editors 376
Heads of Grain from Different Fields 384
Our Homes, Gardening, Poultry News, Temperance .... A. I. Root 389-398

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We do perfect wax rendering. It will pay every beekeeper to gather up all his old comb and cappings and ship to us. We charge 5c a pound for the wax we render, and pay the highest cash or trade prices.

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HONEY MARKETS

BASIS OF PRICE QUOTATIONS.

The prices listed below, unless otherwise stated, are those at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

NEW YORK.—All grades of comb honey are well cleaned up, with the exception of some odds and ends of poor quality, for which there is no demand to speak of. White honey will bring from 14 to 16, according to quality; lower grades from 11 to 13. Extracted honey is also well cleaned up, and very little stock available at this time. As to the conditions of the market in general, in comparison with last year at this time, prices are ruling considerably higher, and supplies are much less. Beeswax is in good demand, and prices rule from 40 to 42, according to quality. Hildreth & Segelken.
New York, April 17.

ALBANY.—Comb honey is very slow sale, and considerable stock is on hand. Quotations are nominal; for, rather than carry over the season we accept reasonable offers. Comb honey is looked upon as a luxury, and for that reason people don't buy freely, perferring staple foods. Prices of extracted honey are high. We quote No. 1 comb honey, 12 to 13; No. 2, 10 to 12. White extracted honey brings 10; light amber, in cans, 8½; amber, in cans, 8. Clean average yellow beeswax brings per lb. 35 to 36.
Albany, N. Y., April 18. H. R. Wright.

SYRACUSE.—The honey market at present here is very quiet—that is, there does not seem to be very much demand by retailers, as they seem to be well supplied; at the same time, the stocks in the hands of the wholesalers are generally low. We quote extra fancy, per case, $4.32; fancy, $3.84; No. 1, $3.60; No. 2, $3.36. White extracted honey brings 10 to 12½; light amber, in cans, 10.
Syracuse, N. Y., April 16. E. B. Ross.

ST. LOUIS.—We have a good demand for extracted honey in this market, and supplies are very light. Comb honey is moving very slowly, and our stock is sufficient for the little demand. We quote extra fancy comb honey, per case, $3.00; fancy, $2.85; No. 1, $2.75; No. 2, $2.50. White extracted honey brings 12c per lb.; light amber, in cans, 10; amber, in cans, 8. Clean average yellow beeswax brings 39½. R. Hartmann Produce Co.
St. Louis, Mo., April 16.

CHICAGO.—There is not much change in the market since our last quotations. Extracted honey still in demand, with the white selling at 10 to 11; ambers, 8 to 9. Comb honey, for which there is very little demand, brings 14 to 15. Beeswax, if clean, brings 33 to 35. R. A. Burnett & Co.
Chicago, Ill., April 17.

KANSAS CITY.—The honey market is firm here, and stocks are nearly all cleaned up. We quote fancy comb honey, per case, $2.85; No. 1, $2.75; No. 2, $2.50. White extracted honey brings 10 to 12; light amber, in cans, 10; amber, in cans, 8. Clean average yellow beeswax brings 33.
C. C. Clemons Prod. Co.
Kansas City, Mo., April 16.

DENVER.—With the exception of a few small lots we are entirely cleaned up on comb honey, and we do not know of any more lots obtainable in this region. Extracted honey is more thoroly cleaned up than ever before. We quote to the jobbing trade as follows: Extra fancy comb honey, per case, $3.15; No. 1, $2.92; No. 2, $2.70; white extracted honey, per lb., 9½ to 9¾. Clean average yellow beeswax brings 33 in cash and 35 in trade, delivered here.
The Colorado Honey-producers' Association.
Denver, Col., April 17. F. Rauchfuss, Mgr.

PHILADELPHIA.—We are entirely cleaned up on all stocks of comb honey except a few lines of fancy comb which are now moving slowly. Our observations show this to be much the same thruout the country. We quote extra fancy comb honey, per case of 24 sections, 18; No. 1 and No. 2, have none to offer; would be in the market to buy at the *right price.* Let us know what you have to offer, and price. Clean average yellow beeswax brings 36 to 38. Chas. Munder.
Philadelphia, Pa., April 16.

PITTSBURG.—Demand is extremely light; some sizes in glass fairly cleaned up. Generally speaking, trade is fully supplied with all grades. We quote extra fancy comb honey, per case, $3.75 to $3.90; fancy, $3.25; No. 1, $3.00; No. 2, $2.75; No. 1 buckwheat, $3.40 to $3.50.
Pittsburg, Pa., April 17. W. E. Osborn Co.

CLEVELAND.—Very little stock is in market. Demand continues light, but price is steady. We quote fancy comb honey at $3.75 to $4.00; No. 1, $3.50 to $3.60.
Cleveland, O., April 16. C. Chandler's Sons.

SAN FRANCISCO.—Extracted honey, crop of 1916, has ceased coming into this market from producers, as stocks are practically cleaned up. Honey jobbers, too, have sold out pretty well, altho some bottlers and preserving companies report some stock on hand, and the demand is slackening owing to present high prices. Comb honey is cleaning up, but at no advance over prices in force during the winter. We quote extra fancy comb honey, per case, $3.00; fancy, $2.75 to $2.85.
Leutzinger & Lane.
San Francisco, Cal., April 12.

LOS ANGELES.—Market is entirely bare of bulk extracted; demand active. New crop will begin to appear within ten days. No changes in comb honey. Considerable stock is held over by dealers and producers. All beeswax reserved for foundation. No considerable stock is on this market—average amount coming in. We quote extra fancy comb honey, per case, $4.25; fancy, $3.85; No. 1, $3.25; No. 2, $2.50. Geo. L. Emerson.
Los Angeles, Cal., April 12.

PHOENIX.—Our market has been one-sided—all buyers and no sellers—as the crop was sold last fall. Never in the history of Salt River Valley has there been as great a demand. The new crop is promising. Mesquite extracting will commence within a few days with favorable weather. Many bees died of starvation, owing to cold and windy weather. White extracted honey brings 8 to 8½ per lb. Clean average yellow beeswax brings 33.
Phoenix, Ariz., April 14. Wm. Lossing.

PORTLAND.—Comb honey is in fair demand only; stocks are being closed out slowly, at low prices. Extracted honey is in good demand, with stocks entirely out of producers' hands. Jobbers' stocks are getting down low, and only enough is in sight barely to supply the local demand. Prospects for the coming season are good. Bees wintered well. We quote extra fancy comb honey, per case, $3.25; fancy, $3.00; No. 1, $2.50 to $2.75; No. 2, $2.25 to $2.50. White extracted honey brings 9; light amber, in cans, 8; amber, in cans, 7. Clean average yellow beeswax brings 25 to 26. Market is bare.
Portland, Ore., April 11. Pacific Honey Co.

TEXAS.—Mr. F. L. Hawkins, of the Department of Agriculture at Washington, also the President and Secretary of the Texas Honey-producers' Association, met with a number of beekeepers at Uvalde today;

other producing counties were also represented. On discussing the honey situation it was decided that 12 cts. for bulk comb and 10 cts. for extracted was none too high. A canvass of beekeepers established the fact that there is no honey now in this section. Wax brings 30 cts, up, according to grade and quantity.
Sabinal, Tex., April 12. J. A. Simmons.

HAMILTON.—Our stock of 60-lb. tins is all sold; also our 5 and 10 lb. tins. Jars of all sizes, still a good stock on hand, selling slow. Comb honey, fair stock is going slow. Larger packages have been most in demand. We quote extra fancy comb honey, per case, $2.50; fancy, $2.25; white extracted honey, none; amber in cans, 11 cts.
F. W. Fearman Co., Ltd.
Hamilton, Ont., April 16. McNab Street Branch.

MONTREAL.—Honey stocks are less than a year ago. Demand for the next two or three months will be limited. We quote extra fancy comb honey, per case, 18; fancy, 17; No. 1, 16; No. 2, 14. White extracted honey brings 14; light amber, in cans, 13; in barrels, 12; amber, in cans, 12; in barrels, 11.
Montreal, Que., April 17. Gunn, Langlois & Co.

TORONTO.—Honey is practically out of the producers' hands at present. There appears to be a scarcity of clover honey on this market and prices are showing a slightly advancing tendency on last month's quotations.
Toronto, Ont., April 17. Eby-Blain, Limited.

LIVERPOOL.—Honey is in good demand, and dearer; 504 packages offered at auction, and 418 sold at $1.20 per cwt. advance. We quote Jamaica, setting amber to palish, $23.40 per cwt.; liquid darkish, $21.60 to $23.32; darkish to amber setting, $22.68 to $23.16; Cuban, setting amber to palish, $22.80 to $24.00; liquid to setting dark, $22.08 to $22.56; Haiti, setting dark amber to palish, $20.88 to $23.28; Chilian, pile 3, $22.20 per cwt. Beeswax is dearer; much wanted at $44.94 per cwt. of West Indian, good bright; Jamaica, dark to good pale, $46.14 to $42.94 per cwt.
Liverpool, Eng., March 27. Taylor & Co.

FLORIDA.—Demand is good. As to supply I am just starting extracting, but outlook is good for a good crop; quality is excellent. White extracted honey brings 8 1/3; light amber, in barrels, 7½; amber, in barrels, 7. Clean average yellow beeswax brings 35. S. S. Alderman.
Wewahitchka, Fla., April 16.

CUBA.—Light amber extracted honey in barrels brings 75 cts.; amber, in barrels, 75. Clean average yellow beeswax brings 39. Adolfo Marzol.
Matanzas, Cuba, April 13.

MEDINA.—Very little change on extracted honey during the last thirty days. Market is practically bare, while the comb-honey situation shows no change from last month.
Medina, O., April 24. The A. I. Root Co.

BANKING BY MAIL AT 4%

No matter where you live you can deposit your savings with this bank --- established a quarter of a century ago --- where your money is absolutely safe and earns 4 per cent compound interest.

Deposits may be safely sent by express or postal money order, check, draft, or the currency by registered mail. We invite deposits of One Dollar and upwards.

Write for our free booklet explaining our system of banking BY MAIL.

THE SAVINGS DEPOSIT BANK Co.
MEDINA, OHIO
A.T. SPITZER, Pres.
E.R. ROOT, Vice-Pres.
E.B. SPITZER, Cashier
ASSETS OVER ONE MILLION DOLLARS

SWARMING CONTROLLED . . . . .
If interested, address Charles Thompson, Marion, Iowa, for information.

BEE SUPPLIES Send your name for new catalog.
Dept. T, CLEMONS BEE SUPPLY CO.,
128 Grand Avenue, Kansas City, Mo.

Wanted: Old Combs and Slumgum
For lowest freight rate bill as "beeswax refuse." Our steam process removes every ounce of wax. We render on shares.
Superior Honey Company, . Ogden, Utah

MICHIGAN BEEKEEPERS

MAY---the month of final preparation. To secure the maximum crop, BE READY FOR IT. Anticipate your needs. Get the new equipment now, and make it Root equipment. Success comes easier with good goods. . Beeswax wanted at the highest market price, cash or trade. Send for catalog of berry-baskets, or of Root Quality bee supplies.

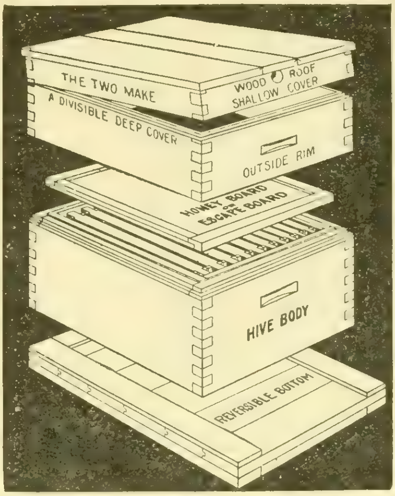
M. H. Hunt & Son, Lansing, Michigan
510 Cedar Street, North

Headquarters for Bee Supplies

Root's Goods at Factory Prices for Ohio, Kentucky, Tennessee

We carry a large and complete stock of bee supplies, and are prepared to give you prompt service. . We have just received several carloads of new fresh supplies. . . Send for our catalog.

C. H. W. Weber & Co., Cincinnati, O.
2146 Central Avenue

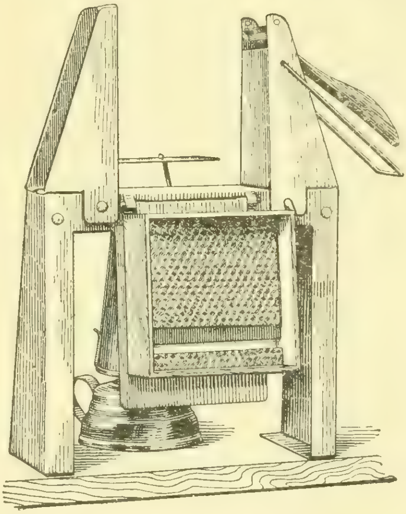


Protection Hives

Price for 5 hives with outside rims $13.75; without rims, $12.00, F. O. B. Grand Rapids, Mich. Delivered to any station in the U. S. A. east of the Mississippi and north of the Ohio Rivers, with outside rims, $15.00.

They are double wall, with air spaces or packing as you may prefer. A large percentage of our customers use them with air spaces and no packing. Packed hives will not last as long as those that are not, as packing has a tendency to absorb moisture. They have ⅞ material in the outer wall, which makes them substantial. The inner walls are of ⅜ material.

If you have ever had occasion to spend any time in a building single boarded during cold weather you can appreciate the importance of double walls. Great quantities of fuel are required to keep the stove red hot, while you roast on one side and freeze on the other. Double walls in hives are equally important. Send for catalog and special circulars, showing large illustrations.



Section-fixer

A combined section press and foundation-fastener of pressed-steel construction. It folds the section and puts in top and bottom starters all at one handling, thus saving a great amount of labor. With top and bottom starters the comb is firmly attached to all four sides — a requirement to grade fancy. Increase the value of your crop by this method. The sale of Section Fixers has had a great increase this year. This is conclusive proof that they are giving universal satisfaction. They are the finest thing on the market for the purpose and have given the greatest of satisfaction in every case, when properly operated. We have hundreds of testimonials on file.

Price with lamp, $2.75. Shipping weight 5 lbs. Postage extra. Send for special circular fully describing this machine.

Tin Honey-packages

Do not wait longer but secure your honey-packages at once. The tin-plate situation is becoming more serious from day to day. Freight traffic is slow and uncertain. We placed our order for tin plate for our 1918 Bee Smoker Trade some time before a state of war was declared. We dared not wait longer for fear we could not secure it at all. Our three-year contract on tin honey-packages is still being honored and runs until Jan. 1st, 1919. We are saving money for car load buyers and others of smaller lots. Send us a list of your requirements. Do not delay. Act at once.

60-pound cans, one and two in a case.

FRICTION-TOP TINS.

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	...	12	6
Crates holding	...	...	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

A. G. Woodman Co., Grand Rapids, Michigan

PREPARED

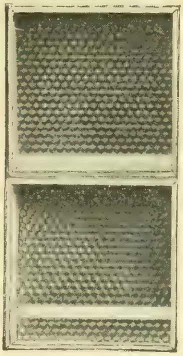
Yes or No?

We have been asking you to look ahead for your needs this season. Some have done so, but there are a few we have not heard from.

Remember

If you order goods by freight when you need them badly you may be disappointed in not receiving them in time. Freight for a year or more has been very slow. Make out an order now after you have decided what you need, and send to

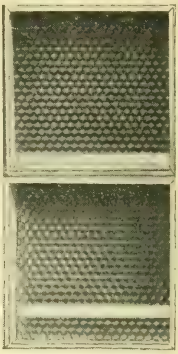
F. A. Salisbury, Syracuse, New York
1631 West Genesee St.



If you use full sheets of foundation in your sections and frames, you are wise, but --- you are wiser if you insist on using ---

Dadant's Foundation

Why? Read the following:



Dadant & Sons, Hamilton, Illinois.

Dear Sirs:—Looking the accounts over we still have 9 pounds of beeswax to our credit. Could you hold this, as we intend to ship more wax before next season? We will use DADANT'S FOUNDATION **only**, as it has proved BEST by TEST.

Yours very truly,
Hebron, Ind., Nov. 16, 1914. Van Wyngarden Bros.

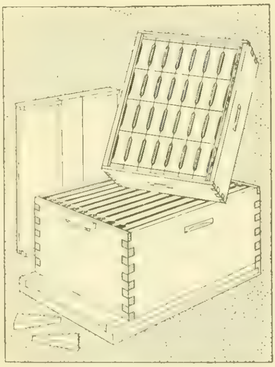
We have many customers who tell us the same thing. Try it yourself and be convinced.

For making Dadant's Foundation we need immense quantities of beeswax

When you have some to offer, drop us a line and get our prices. We buy at all times and pay highest prices.

BEESWAX WORKED into foundation at reasonable prices. OLD COMBS rendered into beeswax on shares or for cash. Let us do all this work for you and save you time and money.

Dadant & Sons, Hamilton, Illinois

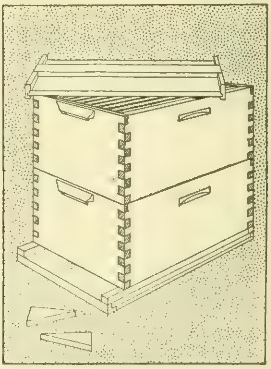


BEE SUPPLIES

We have everything in the supply line and keep an immense stock on hand so as to fill orders promptly.

OUR CATALOG—Lists everything of practical value to the beekeeper. Several new articles listed this year.

Drop us a card and get a copy.



GLEANINGS IN BEE CULTURE

MAY, 1917

EDITORIAL

AN APPEAL TO ALL BEEKEEPERS

JUST AT THE HOUR of going to press, GLEANINGS has received news of a conference held April 23 at the Bee Culture Laboratory at Drummond, Md., called by Dr. E. F. Phillips, of the Office of Bee Culture Investigations, Bureau of Entomology. The purpose of the conference was to consider the problems immediately confronting beekeeping in the war crisis. Invitations to this conference were telegraphed to editors of bee journals east of the Mississippi, to supply manufacturers and teachers of beekeeping in the same territory. The meeting was conducted by Prof. Francis Jager, president of the National Beekeepers' Association, and Dr. Burton N. Gates, of the Massachusetts Agricultural College acted as secretary. A number of eastern men prominent in the beekeeping profession and supply business responded to the hurried invitation to this conference. Among others who addressed the conference were Dr. L. O. Howard, chief of the Bureau of Entomology, and J. W. Fisher, of the Office of Markets.

While we have received a comparatively complete report of the doings of the conference, we are unable to do more at press hour than to summarize these doings as follows:

Committees were appointed for the following purposes: (1) To obtain an increased allotment of funds for the Office of Bee Culture Investigations for this emergency; (2) To ascertain the available supply of honey-containers and to urge the commission which is dealing with this general subject to include honey-containers in their plans; (3) To learn what markets are available for exports of honey; (4) To ascertain the supply of paper containers in case tin or glass cannot be had; (5) To request the postal authorities to permit the mailing of combless packages of bees. These committees began work promptly, and their reports will be issued as quickly as possible.

The conference drew up a series of recommendations, addressed "To the Beekeepers of the United States." The introduction to these recommendations notes the fact that the present war crisis of the nation has brought the supreme test of the usefulness of the beekeeping industry, and demands the fulfilment of its highest obligation. The specific recommendations made urge the following efforts:

1. Producers to increase production to the greatest possible extent, giving preference to extracted honey, because in that way the total honey supply may be more greatly increased. (Two comb-honey supers may easily be converted into a deep extracting-super or a hive body.)
2. Inspectors of apiaries to emphasize educational work, even to take precedence over the inspection of individual colonies.
3. Beekeepers to organize county or local associations for the rapid dissemination of information, these to be affiliated with a state association, which in turn should join a nation-wide organization; the holding of field meetings in early summer to give practical information on manipulations; keepers in the producing centers which are far from markets to organize practicable co-operative buying and selling associations.
4. Bee-journals and agricultural press to co-operate in every way in this movement, and especially in securing and printing the most reliable market quotations and crop estimates possible.
5. The teachers of beekeeping and extension workers to increase their activities.
6. To urge the government agencies to give preference to beekeepers' supplies, bees, honey, etc., in freight shipments.
7. The manufacturers of beekeeping supplies to continue their present policy of operating their plants at their maximum physical capacity in order that supplies for the 1917 crop may be available, and to expedite shipments.

8. Agents and dealers in supplies to order immediately in order to anticipate their season's needs and to ship to beekeepers goods with utmost promptness.

9. Producers to order necessary supplies early, and to order standard goods to save time at the manufacturing plants.

10. Beekeepers to supply themselves with a liberal quantity of containers immediately in order that the present seeming shortage in tin and glass ware may not prevent the sale of their crops.

11. Every beekeeper to sell as much of his honey as possible on home markets.

12. Those who sell honey at wholesale not to sell their honey until they have full information concerning the needs of wholesale markets.

These recommendations conclude with the following appeal: "We call upon all beekeepers, and all those whose chief interest is the upbuilding of the beekeeping industry, to redouble their efforts to increase the importance of beekeeping as an agricultural industry which conserves a valuable national resource, and which produces a non-perishable, wholesome food."

A CALL FOR HELP TO BEEKEEPERS

WE CANNOT URGE too strongly the largest possible production of honey this year. It is the patriotic duty of every beekeeper in the land to attend the nation-wide call for increasing and conserving the food resources of the country—and at the same time he will be doing himself an excellent turn. "The rapidity with which the unusually large honey crop of last year was sold," says Dr. E. F. Phillips, "does not indicate danger from overproduction, even in times of peace, and there is every reason to expect that 1917 will see a good honey market."

Dr. Phillips, of the Bureau of Entomology, Washington, D. C., has just issued a public letter on "The Necessity for Increasing the Honey Crop," in which this timely advice is given beekeepers:

> Beekeepers should do their utmost this year to increase production, not only by increasing the number of colonies in so far as it can be done without decreasing the crop, but especially by giving their bees the best of attention. Those who have their bees in box hives are being urged, so far as they can be reached, to adopt the modern equipment, but this will be valueless unless they at the same time adopt modern practices. Natural swarming should be curbed as much as possible, and increase should usually be made by artificial division. The crop may often be materially increased by giving the bees plenty of room for storage, for gathering often ceases when bees are overcrowded. In this regard many commercial beekeepers are not doing their best. Those owning only a few colonies may profitably increase the number of their colonies, but they should remember that, without intelligent care, bees will not be profitable, except in rare seasons. The tendency at present is rightly to encourage the professional beekeeper, who knows how to get the most from his bees. The professional beekeeper, and those who wish to enter this class, should at once consider the establishment of additional apiaries, care being exercised not to overstock any one locality. To those who have not begun outapiary management, this year promises to be a good time to make the start.

The beekeepers of America will hear the special call directed to them in this year of war and world-wide want, and will not fail. Of this we are certain.

NOSEMA APIS IN VICTORIA

UNDER THIS TITLE, Mr. F. R. Beuhne, Government Apiculturist of Victoria, reviews the work done in a study of an adult disease of bees. The paper appears in the Journal of Agriculture of the Department of Agriculture of Victoria for last October.

The discovery of *Nosema apis* by Professor Zander and the work done on the organism by the English investigators naturally caused the Australian beekeepers to wonder whether the death of adult bees, which they observed in 1909, was due to this organism. The Government Biologist, Mr. W. Laidlaw, found the organism and this caused some alarm. However, it was found that the protozoon was present in 86 apiaries out of 88, from which bees were examined, and in many of these apiaries no dwindling of colonies was observed. This is also known to be true in the United States. This indicates either that the English investigators were mistaken, that Australian and American bees enjoy an immunity to the organism, or that climatic differences account for the variations observed. Recent work by Rennie and Anderson in Scotland throw considerable doubt on the conclusions of the English investigators.

In this paper, Mr. Beuhne outlines experiments conducted in 1915-16, in which nineteen colonies containing *Nosema apis* were removed to a new location, while five infected colonies were left behind. Of the five, two dwindled away and the others freed themselves of Nosema. Of the nineteen, two were accidentally lost thru robbing, and the last examination showed Nosema in only one colony. One of the nineteen died of starvation. "Even badly affected colonies may completely recover under favorable conditions; but one colony retained the parasite thruout, and may be considered a "disease carrier." Mr. Beuhne advises certain precautions to help bees get rid of the parasite. He evidently accepts in general the conclusion that "Isle of Wight disease" is serious in England and that it is due to *Nosema apis.* Of the latter there may be some question.

According to these results, there is either something wrong in the results of the English investigators or *Nosema apis* behaves differently in England. Since there seems no immediate danger of an epidemic of disease in America, it may be best for American beekeepers to wait for somebody to settle some of the questions yet unsolved before they begin to worry.

* * *

SUGAR SHORTAGE AND HONEY PRODUCTION

THERE CAN BE no doubt that there will be a sugar shortage in the United States in the near future. The price has already advanced greatly, and it is apparent that the two Americas will have to furnish the food for Europe as long as the great war lasts and for some time afterward. The price of everything is climbing, including honey. All indications show that it will be impossible to have an overproduction of extracted honey next year. The market has been cleaned up for extracted in bulk; and it is apparent that next year's crop will be snapped up at good prices. What those prices will be, it is too early to predict.

The slogan has gone out that every spot of land should be utilized for the growing of food crops. In the same way every bit of unoccupied bee territory should be utilized.

If possible, the crop of extracted should be greatly increased. Even tho the amount should exceed that of 1916 (and that was large), there cannot be an overproduction. We are advised that the Bureau of Entomology appreciates the situation, and proposes to carry on a campaign, by means of circular letters and otherwise, to increase at once the crop of honey in the United States.

* * *

BIG DEMAND FOR COMBLESS BEES

IT IS APPARENT that there has been an enormous demand for bees in package form. Many of our advertisers in the South are booked up to the first of June, and some of them are working almost day and night to fill their orders. The backward spring has hit some of the package men pretty hard. Weak colonies have dwindled away and brood has been chilled. The result is that some of the breeders have had to cancel orders, and not a few are returning money sent for bees.

We wish to suggest that those who have ordered bees in the pound form be as lenient with their Southern breeders as possible. We chance to know that some (and perhaps all of them) are doing their very best to fill orders on schedule time. While most of them will succeed, others will be delayed.

It will do their customers of the North no good to cancel their orders if they cannot get prompt delivery, for in so doing they will be at the bottom of the list when they place their orders with other breeders.

The backward spring has been hard on bees in the North in some localities, and it is apparent that Northern beekeepers have placed orders with Southern men for bees in package form to build up some of their nuclei. But we fear that in some cases the bees will come too late to do much good this season.

* * *

TWO NEW BOOKS FROM THE AMERICAN BEE JOURNAL

THERE ARE LYING on our table two new books from the *American Bee Journal.* The first is entitled "One Thousand Answers to Beekeeping Questions," being answers by Dr. C. C. Miller to questions asked in the *American Bee Journal* and compiled into book form by Mr. M. G. Dadant. It is gotten out in the convenient form of an encyclopedia—that is, the questions are arranged in alphabetical order. The first question relates to Absconding, and the last to Yields of Honey. The fact that the answers are by Dr. Miller is a sufficient guarantee that they are likewise orthodox.

The second book is a revision of a former edition entitled "New Beekeeping," by C. P. Dadant, bound in cloth. It appears to be, just as the author says, largely rewritten. The first edition was based on Newman's book, "Bees and Honey." The last edition appears to be wholly the work of C. P. Dadant, the editor of the *American Bee Journal.* It is well gotten up and will be an excellent introduction to the larger work, Dadant-Langstroth Revised, by the same author.

BEES AND FRUIT TOGETHER

A New-Yorker who had Such Remarkable Yields of Fruit as to Astonish the Natives

By E. R. Root

THERE is a man in the state of New York engaged in the culture of bees and the growing of fruit who has been astonishing the natives (or neighbors) by some of his remarkable yields. As a prophet is not without honor save in his own country, so this man, when he went into the scheme of setting out fruit-trees when he was past forty years of age, provoked no little ridicule on the part of some of his good neighbors, and no wonder. Any one who could have the nerve to cast his bread upon the waters like this, and expect to get returns from it in his lifetime, must be visionary, not to say crazy; but that is precisely what our man did. He put out a *seventeen-acre orchard of apple-trees, Baldwins and Greenings, when he was past* 40, *and inside of ten years he took in one season six carloads of apples.* Not only that, he secured a big crop of honey, 3000 bushels of pears, and 1000 bushels of peaches. "Going some," you would say, and he surely was. His neighbors by this time began to sit up and take notice.

How did he do it? Easy enough with the right man and the right environment.

One such "right man" is C. J. Baldridge, of Kendaia, N. Y., for it was he that did the trick. That his "environment" was right is indicated by the name Kendaia, which is of Indian origin, meaning apple-orchard; for it appears that the Indians, before the advent of the white man, had found that this locality was favorable for the growing of apples, located as it is on the shores of Seneca Lake.

Mr. Baldridge is a beekeeper 52 years old. He has now about 450 colonies of bees, and last year secured 50,000 lbs. of extracted honey. He has a farm of 175 acres, of which 49 are devoted to growing of orchard fruits. There are 17 acres of apples, 6 of peaches, and 26 of pears, making 49 acres all told. The pear-orchard, 11 acres bearing, is about 30 years old. Last year's crop was a light one, as he secured only about 1000 bushels. There are 15 acres of sickel pears set 5 years.

Our "right man" is a firm believer in the co-relation of bees and fruit. So far as the pears were concerned, he said that the bees contributed almost the whole crop for him, and they were a great help to the apples.

The man who astonished the natives.

His orchards are within 100 rods of his home apiary of 130 colonies; and while the yield of fruit is increased very materially by the help of the bees, the bees in turn are very materially helped by the pollen and nectar in the spring, just at a time when they need both; for there is nothing like natural pollen and natural nectar to build up bees. When asked whether he ever secured any honey from fruit-trees he replied that about once in six or eight years he got some surplus.

When we inquired whether his neighbors secured as good crops as he (those who did not have any bees), he said:

"An orchard of 1200 Bartlett pear-trees, two miles from my bees, with no bees near it, some seasons fails to set fruit except on the outside rows of trees."

Asked again why the *outside* rows set fruit he said:

"A few bees going to that orchard from a distance work on the trees they first come to, and so some blossoms become fertilized on the outside rows, while no bees reach the trees in the middle of the orchard."

With this exception, most of his neighbors who are in the fruit-growing business have bees near by, because they know that without bees their yields will be irregular

THE DANGER OF SPRAYING WHEN THE FIRST PETALS BEGIN TO FALL.

When we asked Mr. Baldridge whether any harm would result if fruit-trees were sprayed when the first petals begin to fall, he said he thought there would be. When we put to him point blank the further question why he held to that opinion he said:

"At the time the first petals are falling from the trees, other blossoms are just opening, and the bees work on these blossoms. If these blossoms are sprayed, bees will be killed."

When we told him that Mr. Van Rensselaer, who operates that fifty-acre orchard of apple-trees, nine miles north of us, began spraying about the time the first petals began to fall, and that we had seen no bad results, he said:

The 17-acre orchard that in its tenth year produced 6 carloads of apples with the help of the bees.

"Mr. Root, you may have both brood and bees dying, and yet may not notice it, unless you go thru the hives very carefully at the time this spraying is going on; and, again, a few days after, you may not discover anything wrong. The fact that bees are working on trees for some time after the first petals begin to fall shows that the practice is fraught with some danger. Believe me, I should not want to run the risk."

WHY SOME PEOPLE FAIL IN GROWING FRUIT.

In answer to the question why so many fail to make a success in growing fruit Mr. Baldridge said:

"They fail because they do not meet conditions that are necessary. First, there should be a suitable location; and the location should be favorable to the particular variety of fruit to be grown, giving special consideration to the matter of air drainage as well as to natural or artificial soil drainage; and last, but not least, there should be bees in or near the orchards, and plenty of them."

A bunch of apples from one sprig of the ten-year-old trees.

When asked what he meant by "air drainage" he said:

"By air drainage I mean a location where the heavier and colder portions of the air can drain away from the orchard. That condition is met by putting the orchard on a hill. An orchard should never be put in a pocket where the cold air can settle, and where frosts would do damage."

Mr. Baldridge attributes a part of his success in beekeeping to his method of wintering. He uses the old-style two-story A. I. Root chaff hive, and he has been using it for the past 35 years with such marked success that he wonders why its manufacture was dropped. When it is remembered that this old hive embod-

One of the ten-year-old apple-trees that helped produce those five carloads of apples.

ied principles that have of late years proven to be safe and reliable, by exhaustive experiments at the Bureau of Entomology, Washington, D. C., it is not hard to discover why Mr. Baldridge has not only been successful in his wintering,* but has with it secured enormous crops of honey.

The lower story takes ten frames, and the upper fourteen. The lower story has four inches of packing on the sides, two on the ends, and the upper story has two inches of packing all around.

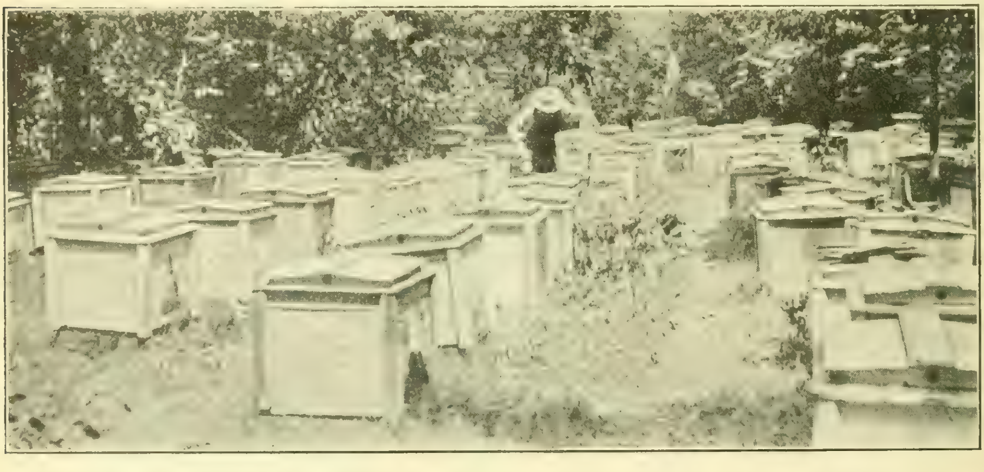
A. I. Root always believed in a warm super as well as a warm brood-nest; and Mr. Baldridge says A. I. R. was right. It is possible that this old reliable chaff hive may be resurrected. The only objection to it is its expense. "But," said Mr. Baldridge, "when you divide that expense up by 25 years of service, it is merely nominal. The work of putting the bees up for winter is practically nothing."

Mr. Baldridge's tractor hauling a load of hay.

HOW HE DOES SO MUCH WITHOUT BREAKING DOWN.

We asked him how he managed to run a series of fruit-orchards comprising 49 acres, a 175-acre farm, and 450 colonies of bees, without breaking down under the strain of the work. His reply is worth repeating:

"I have a son, a young man who divides



One of Baldridge's apiaries where he still uses the old two-story Root chaff hives that have given such good results in wintering.

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*During the past winter he wintered 180 colonies at two of his yards in these hives without the loss of a single one. His total loss from all causes the past winter was 14 out of 447 colonies fall count.

the burden with me. We use all the labor-saving devices possible, including a tractor, two automobiles, five gasoline-engines, two compressed-air spraying outfits, storage batteries, and electric light, the old two-story Root chaff hive, and enough hired help to get all the work done in season."

Mr. Baldridge is a firm believer in "GLEANINGS" as an advertising medium. He sold ninety thousand pounds of honey in six months thru a small ad that ran six or seven months. He says, "The past two years I have had quite a demand for the best grades of clover and basswood honey in family-size packages. I have met this demand with the five-pound friction-top pail." He attributes this demand to the A. I. Root Co.'s honey-advertising campaign and the higher prices of sugar and syrup.

DESTRUCTIVE SPRAYING

How it Both Kills the Bees and Sterilizes the Pollen

By Lewis P. Tanton

IF we could get a reliable estimate of the annual crop destruction caused by reckless methods in spraying, it would, in these times of high-priced and scarce commodities, prove a wholesome eye-opener. In 1913 my whole yard of twenty-five hives, and nearly all the bees in this province mysteriously died. The following year, I and some others imported fresh colonies, with the same results. The next year I tried again, upon a smaller scale, but before doing so I attacked most vigorously, in the press, the educational fruit-spraying methods then being taught. The "Fruit Inspector" replied, sarcastically at first, but later pulled in his horns. Since then our bees have had a chance for their lives.

Since 1913 our fruit crops have been bad, and in some cases, such as in cherries, almost a total failure. The decimation of the wild as well as the domestic bees, and other fertilizing insects, is no doubt largely responsible for this, for our bumble-bees met the same fate. Another factor—which I have never seen referred to in print—is the sterilization of the pollen by the arsenate or other spraying solution, so that even if carrying agents were available the poisoned and killed pollen would not fructify the fruit ovules. These two conditions have produced crop reductions and losses which statistics has never yet portrayed.

On the question of spraying, are the old rut, frequently recommended methods, logical and sensibly scientific? We are told to "spray while the calyx cup is open." Is this as wise as it is made to appear? At this time the fruit is upright in position, and the rain allowed free scope to deluge the cup and dilute or completely wash out the spray solution. Both the leaves and the fruit are small, with little area to catch and retain the poison, and much falls to the ground as waste. Moreover as the fruits grow larger the calyx cup expands, creating a new unpoisoned surface which the codling-worm will surely select for its point of entrance. It is usually three to six weeks after early spraying before the maggot appears, giving ample time for rain and weather to wash out or neutralize the mixture.

Now if we spray when the fruit has developed into form, say about ten days before the worm is due, the conditions should make the process more effective. The calyx, which is always more or less spongy and absorbent, would soak up the liquid at the very point of attack. The fruit being heavier at this stage droops downward. In rain the calyx being underneath is protected from the shower. The poison washings from the larger surface of the fruit, as well as from the leaves above it, would tend downward, allowing the calyx to absorb an additional supply of the mixture from the passing drops. The solution at this period would be fresher, stronger, less injured by weather, and decidedly more deadly and effective. The larger leaf and fruit area carries a greater supply of the mixture which is further disseminated by later showers. You want to kill the worm. It is the outside of the fruit which he attacks first. To poison his gateway as above, appears to me the common-sense way.

Charlottetown, P. E. I., March 6.

COMB HONEY --- FEW SWARMS

Keeping the Colonies Contented at the Critical Time, Thus Warding off the Swarming Fever

By Mrs. S. Wilbur Frey

[Before attempting to understand the following article the reader should not fail to turn back and study the illustration on page 254 of the April number, showing Mrs. Frey's hive and the large box-like "cap," which will hold three 45-section supers. By the way, the president of the Michigan association considers Mrs. Frey one of the best comb-honey producers in the state.—ED.]

ON June 5, 1912, I sold 100 of my strongest colonies. There were 41 very weak colonies left, and these I built up with drone comb that contained a little honey. That year I sold $160 worth of comb honey.

In the spring of 1913 I had 120 colonies that I secured by dividing the previous year. I had to fight foul brood in all of my yards that year, and the white-clover flow was nearly over before I got the mastery of it. I lost the crop entirely on ten or twelve colonies at the home yard, but had everything in good condition for winter. That fall I sold $1000 worth of honey.

In 1914 I had some foul brood in all the yards. The spring flow was poor, but that of the fall was extra good, and I sold $1600 worth of honey.

Last year the spring honey-flow was good. The fall flowers were extra fine; but cold winds and storms came on just as they came into full bloom, the blooming time being ten days later than usual. I sold $1200 worth of honey and put 170 colonies in winter quarters. One-third of them are in single-walled hives, and all of them are on the summer stands.

During the last four years my bees have averaged $10.00 per colony, spring count, on honey sales. My first-grade honey is all sold to commission men at wholesale prices. The lower grades are all sold locally.

In addition to the comb honey I produce 1000 pounds of extracted honey yearly. This is from unsalable combs, trimmings, etc. This amount of extracted honey yields about 60 pounds of beeswax. At two auction sales this last winter in the same locality I sold over $70 worth of second-grade comb and extracted honey at good prices, and as fast as I could make the change.

ONLY FOUR TRIPS TO THE OUTYARDS AND THE CROP IS SECURED.

Four trips are all that are necessary during the honey harvest. They are as follows:

No. 1. Equalizing the brood and putting the bees in condition to stay at home and enter the supers; also putting supers on such colonies as are in condition to receive them.

No. 2. Removing queens where there is danger of swarming and giving supers where needed. I take out all queens as soon as the bees are well started in the second supers.

No. 3. Giving supers where needed, destroying queen-cells, giving each queenless colony a comb of young larvæ.

No. 4. Destroying all queen-cells except one in each colony.

RESTRAINING THE SWARMING IMPULSE BEFORE SUPERING.

I always give the bees and queen unlimited room without exposing the brood to chilly air. Shortly after fruit bloom three-fourths of the colonies will usually have six or eight combs packed full of brood with bees hatching rapidly, and something must be done or they will swarm as soon as they can build cells after the clover begins to yield. Frequently many of the largest and most promising colonies will sulk and hardly make a start in the sections. They are just waiting for the time to come when they can swarm.

Can this desire to swarm be prevented? It certainly can. The bees must be led to think they have something to do. Some must be made to cluster ready to build combs, while others are caring for brood. If these conditions are present all the bees that can be spared will be in the field whenever there is an opportunity. Here is the way I accomplish this: When the brood-nest has twelve combs of brood and honey I take out one, leaving a vacant space in the back of the hive for clustering. This space is then filled with an empty frame having no starter. While the bees must cover twelve combs before this operation, I do not allow them more than eight combs of brood after this time. As often as I find more I rob them down to the required number, taking away sealed or hatching brood which I give to weak colonies, filling in the space thus created with combs or honey as required.

CAPPING THE COLONIES.

I cover the brood-nest with oilcloth, leaving one space at each end of the hive open into the cap. I now put on the cap (for description of this see my article in the April number) and into it put one empty frame in front, then four combs containing some honey; next, an empty frame, thus making six frames in the cap. The bees will occupy these combs as soon as they are strong enough, and will soon cluster in the empty frames ready to draw out combs.

TIME FOR THE FIRST SUPER.

I plan to put the supers on about the second day that the bees are working on clover, or when they begin to store in the caps. They are strong enough for my large supers when they begin to hang over the combs in the cap, and begin to build comb in the empty frames. I super the yard first that is the strongest in bees. Forty out of fifty colonies should then be ready for the supers. I like to begin putting on the supers as soon as conditions are right, as the three yards require three days for this work. By the time I arrive at the last yard I usually find the combs in the caps getting quite heavy with honey. Some may wonder why I do not put on the supers earlier and not be so hurried at the last moment. Well, I like to hustle, and I like to see the bees hustle, and they always do whenever there is any sweet to be found.

CAPS OFF AND THE FIRST SUPERS ON.

I always put on the first supers when the bees are working well. I set the cap off on the ground behind the hive, then arrange the brood-nest with a frame of the youngest larvæ at the back, then put in one more frame from the cap, thus making twelve frames in all in the brood-nest again. The top of the hive and the brood-frames having been cleaned directly after setting off the cap, I am ready for the super.

If the clustering bees have started building combs these combs should be cut in strips and placed on the top of the brood-nest under the super. This hastens the work in the super. All that are heavy with honey should be reserved for the table, or melted up. All surplus combs are used on weak colonies.

MY REASON FOR USING CAPS.

First, the caps discourage swarming almost to a certainty when arranged with empty spaces for the bees to cluster.

Second, when there are bees enough to occupy the supers at once the combs will all be drawn at once and be of an even thickness. I never use separators in large supers.

Third, the foundation will not be gnawed and soiled, and the honey will thus be whiter.

THE SECOND VISIT, IN WHICH QUEENS ARE REMOVED AND THE SECOND SUPERS ADDED.

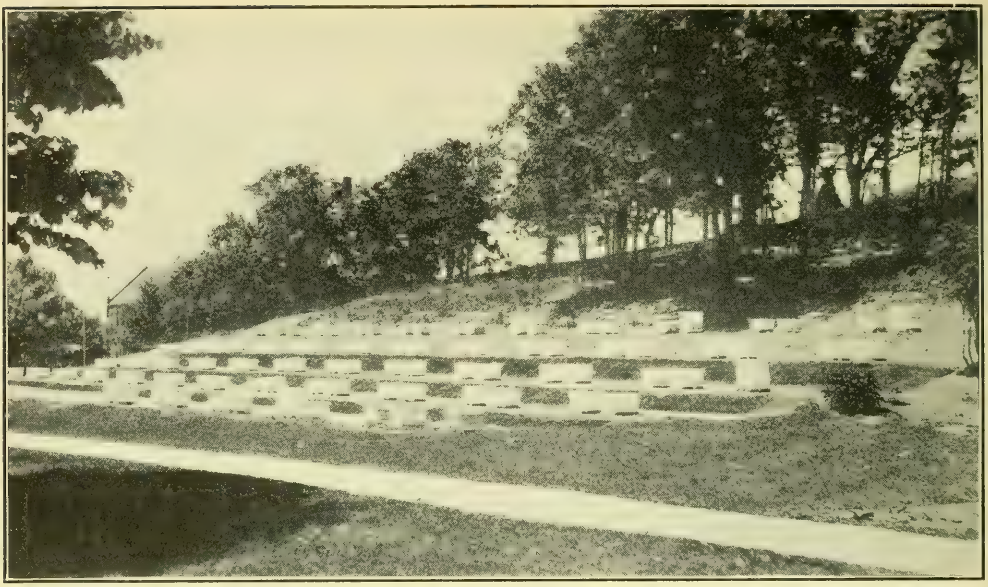
In from eight to fifteen days, depending upon the weather and on the honey-flow, I make my second visit to the yard. The sections in the first super are probably well drawn and partly filled with nectar. I put on the second supers immediately on my arrival at the yard, as the clustering of bees in the new super takes them up out of the brood-nest and makes the work of examination for swarm preparations much easier.

After all supers are placed, beginning where I put the first supers on, I examine the brood-nests for indications of swarming. If I find only cell cups, but no eggs in them, I close the hive and pass on. If I find any cell cups containing eggs or hatched larvæ, even if very small, I remove the queen. If she is an extra good queen I save her in a nucleus, otherwise I kill her. If the swarming impulse is quite general I may remove the queens from two-thirds of the colonies, or even more than that if there are that number preparing to swarm. If nearly the whole apiary is preparing to swarm I save in nuclei as many of my best full queens as are needed to furnish combs of larvæ at the next visit. With a boy to help me I can uncover a hive, remove the supers, find the queen, replace the supers, and cover the hive again at the rate of one hive every seven minutes. I seldom fail finding the queen the first time over the combs. Often when there is not much work to be done I can go over a yard in three hours, putting on or changing supers, looking for queens, or the condition of each colony. It matters not how far advanced an apiary is in this preparation for swarming, for I can so treat every colony that there will be no more swarming for at least eight days longer.

THE THIRD VISIT.

In nine days at the longest from the time that I remove the queen I have to return and destroy all queen-cells, as it is possible to have a young queen hatched out on the tenth day after the removal of the old queen. It is not enough to destroy the cells before the ninth day as there yet may be an unsealed larva over which the bees will construct a queen-cell. The queen from such an old larva would be worthless, but she could lead the bees to the woods just as well as a good queen.

On this third visit I first examine some of the colonies that have not made any previous attempts at swarming, and so still retain their queens. If such colonies are still without queen-cells I remove two combs of young larvæ, replacing them with empty comb, starters, or sheets of foundation. I continue thus until I have five combs of young larvæ; then I commence on the queenless colonies, destroying every queen-cell and giving each colony a comb of young larvæ



Apiary at the University Farm (University of Minnesota, St. Paul). Photographed by O. L. Wille. Minnesota stands first in the United States in introducing beekeeping in the agricultural college as a distinct division.

from those I have just taken from the other hives with queens. If by any possibility a young queen is found hatched, no larvæ are given, as this would lead to swarming. When my stock of combs of larvæ is exhausted I return to other colonies that still have their queens and continue the work of examination until this stock is again replenished. I thus continue to examine alternately the two classes of colonies until I am thru the yard; and as I proceed with this work I also note and mark the colonies that need supers.

The giving of the comb of larvæ satisfies the bees. They have babies to feed, and they continue the work of honey-gathering, as they know that it will be impossible to swarm within twelve or fifteen days. Their queen-cells are all gone, and they go to work energetically to build another lot; and, by the time the new lot of queens is ready to hatch, the swarming fever has been cured.

THE FOURTH VISIT.

The last visit is about nine days after destroying the first batch of queen-cells and giving the combs of young larvæ, or eighteen days after the removal of the queen. Nearly all the brood has hatched, the hives are overflowing with young bees, the working force has been kept together, and the brood-nests are nearly full of white honey. The bees' greatest desire now is for a new mother, and this desire can be gratified by simply destroying all the cells except one—the largest and finest in each hive. I always place the comb of larvæ in the same position in each hive, hence lose no time in finding it. Two minutes per hive serves to destroy the cells, and it is not necessary to examine these colonies again. As the young queens begin to lay, the bees will remove the honey from the brood-nest into the sections. Furthermore, we save the honey that would have been used in rearing a lot of bees that would be merely consumers of still more honey during the hot part of the season when there is little to gather.

At this fourth visit, if the honey-flow is fairly good, the bees should be ready for the third super. This time I raise the top super and put the empty one between the two. I cover the top of the lower super with oilcloth, leaving the bees only one row of sections thru which to go above. I also cover the top of the empty supers, leaving but the one row of sections in which the bees can go up into the second super, now on top. If the lower super should be nearly capped I put this one on top and the second one at the bottom. It is very apparent, if the honey-flow is still on, that the queen will have no desire to swarm with three supers of forty-five sections each.

The bees practically finish one super before I take the queen out. They finish the second one shortly after, and the third later on in the season. They often require a fourth super in the fall.

I do not use bait sections. I have found from several years' experience that I get more honey, and that it is of better quality, when no baits are used.

INCREASE, AND SUPERING THE SMALLEST CAPPED COLONY.

While I am supering the first-capped colonies I make provision for the next visit when I expect the weaker colonies will be ready for supers. In my rounds over the yard I save one comb of hatching brood from each colony that is strong enough to spare it. Three of these combs with one comb of honey will start a fine colony. Crowd these together with a division-board to keep them warm. Contract the entrance so that only two bees can pass out at once. As I save these combs with the adhering bees I shake the bees from one extra comb with each.

Having prepared as many new colonies on the previous trip as I expect to need I now have colonies that can use the capped combs in turn from the colonies that are ready for the first supers.

Before capping the new colonies I destroy all cells and give each a frame of larvæ. Cells built in weak colonies produce poor queens. Combs from the caps should now be added until there are twelve in all. The brood-nest should be covered after this, leaving, however, one space on each end open for the bees to go into the caps, and the caps can be filled with combs. In twenty days there will be a fine young queen laying, or, if desired, a laying queen can be introduced the day these colonies are started. This is also a good opportunity for introducing choice queens, as young bees will accept any queen.

DISCOURAGE LATE SWARMING.

When I remove the queen early in the season I take one comb of hatching brood with the adhering bees, and put in a division-board. At the next trip, nine days later, I take out two more combs of hatching brood and give also one comb of larvæ. I move up the division-board and cover the space with a strip of oilcloth before returning the super. This space behind the division-board discourages swarming, and also throws the workers immediately into the sections.

I have found this plan comparatively safe. The bees are requeened early; it saves one operation, and gives more time between visits.

I have been asked why it would not be just as well to allow one queen to hatch from the first batch of cells. The great objection to this is that the colonies would not yet be cured of the swarming impulse. Any cell overlooked would lead to swarming. If a virgin returned to the wrong hive there would be swarming; and once the swarming-note is heard in an apiary in which young queens are taking their flight, there is danger of a panic. By the time a second lot of queens is ready to hatch, the swarming fever is over.

Sand Lake, Mich.

[The details given here may seem like a good deal of red tape; but on account of this system Mrs. Frey no longer has the trouble that she used to have. She writes that she once saw a swarm go to the woods early in the morning, and, shortly after, other colonies began to swarm until it seemed all the bees in the yard were swarming. A woman and three children helped hive swarms from eight in the morning till late in the afternoon. Swarms returned, went into the wrong hive, doubled up and clustered until the whole apiary seemed to have gone crazy.—ED.]

ONLY TWO DAYS A WEEK

Required to Manage a 400-Colony Bee Business in Three Outyards Located Fifteen Miles Apart

By E. S. Miller

FOUR hundred colonies of bees may be properly cared for with an average amount of time of only two days a week for the year. Success is due more to proper equipment, efficient business methods, and the elimination of unnecessary operations than to any amount of hustling. In the methods here described I claim no originality, having endeavored to adopt only such plans as seem applicable to local conditions. I am not an advocate of any "let-alone plan," being a believer in intensive rather than extensive beekeeping. No business will successfully run itself, and beekeeping is by no means an exception to this rule. Frequent examination of the colonies is important if done intelligently and systematically.

Valparaiso is a beautiful little city of about ten thousand inhabitants, situated in the northwestern part of Indiana, near the southern end of Lake Michigan, and within about an hour's ride of Chicago. It is connected by steam and electric lines to a number of other towns and cities varying from a few hundred to fifty thousand or more inhabitants. These lines assist not only in marketing but also occasionally in visiting the outyards. However, excellent stone roads extend almost everywhere, and apparently nearly every one who doesn't run a big machine has a Ford. Just outside the city limits, and almost within sight of one of the largest universities in the world, our home is located. Fifteen miles to the northwest, and a like distance to the northeast, are two other main yards, forming with the home yard a triangle having its base along the Calumet River and within a short distance of the Dune region of the Great Lakes. In addition to these I have two outyards, each about five miles from these main yards. Some may wonder why the yards are so far apart. There are two reasons. One is that with clover on one side, and the autumn flowers of the marshes on the other, we can take advantage of both ends of the season without moving bees. The other is that I happen to own the land—quite an advantage when one wishes to erect permanent buildings. At each of the main yards is a good honey-house surmounting a bee-cellar made of concrete or brick, and built expressly for the purpose of wintering. Each building is equipped with a full complement of tools, including not only an extracting outfit and other tools commonly used, but also hammer, saw, ax, shovel, as well as lumber, nails, and all supers and other hive parts likely to be used in the season's work. I believe that depreciation and the interest on the investment in buildings and equipment of this kind are less expensive than the loss of time and labor occasioned by carrying about the necessary tools and material, to say nothing of the loss and annoyance caused when articles needed are left behind. Furthermore, a good building supplied with stove, table, work-bench, and other conveniences, enables one to continue work in spite of rainy weather or sudden storms, which may cause considerable loss of time in outyards under ordinary circumstances. The cellars are dry, well ventilated, and hold nearly a constant temperature of 45 degrees from the time the bees are carried in, about December 1, to the time they are taken out, about April 1. No attention at all during the winter is needed.

Usually in March, before the outdoor spring work begins, the hives and supers are gone over, necessary repairs made, and painting done. Drone comb is replaced with full sheets of foundation, wax is rendered, and tools are made ready for the summer's campaign.

In carrying bees out to the summer stands we find that two men can easily make the thirty-mile trip, clean up the yard, carry out 150 colonies of bees, and place the entrance-blocks, all in a day's time. If the weather is warm, and the bees inclined to fly or crawl out, they are first smoked in, a notched lath tacked over the entrance, and a tuft of loose cotton used to close the opening. The cotton is not removed until toward evening. Cement hive-stands, which may be left on over winter, save a considerable amount of labor. As the hives are usually dry when taken from the cellar, it is seldom found necessary to clean bottom-boards. Carrying out the hives is rather hard labor, and thus far I have not been able to find an easy way; so I usually try to get some husky man to do the carrying. From this time on until extracting begins I have no need of a helper.

Within a week from the time the bees are removed from the cellar, if the weather is favorable, the yards are again visited. To do away with the necessity of loosening the sealed covers, examinations are made by tipping the hives up from the bottom. Very weak colonies are placed carefully above a strong one with a queen-excluder between. Moderately weak colonies are removed to the stands of strong colonies, while the strong ones are put where the weak ones formerly stood. Those short of stores are fed by inserting a full-depth comb of dark honey reserved from the last extracting the fall previous. I believe this to be the easiest and best way of feeding, and it helps to dispose of the dark honey. Since comparatively few colonies as a rule need attention, a few hours' work is sufficient for each yard.

The queens are usually clipped during the latter part of April; but if the weather conditions are unfavorable it may be postponed until fruit bloom, at the time of the next operation, which consists in placing a second ten-frame hive-body over an excluder on all strong colonies. This supering effectively holds in check any tendency to swarm at this time. Any queenless colonies are placed on the top of other colonies as tho they were supers.

About May 1, bees of the poorest stock are hauled to the two outyards and given a second hive-body without an excluder, since the extra amount of room tends to delay and in some cases to prevent June swarming, and distributes the work so as to avoid a rush in the busy season. When moving, no screens are used. A tuft of cotton closes the small opening at the entrance. Crate staples hold the bottom, and two 2-penny nails fasten the inner cover. About one day is required to move.

From fruit bloom to clover there is little yard work except supplying second hive-bodies as supers when the colonies become sufficiently strong, and seeing that every hive is abundantly supplied with stores. During this time, also, comb-honey supers are prepared, since foundation can be handled better at this time than when the weather is cold.

About the first week in June, just before the clover flow starts, all hives are examined in regular order. In all colonies sufficiently strong the empty or nearly empty combs from the upper story are put in place of the brood-combs below, with the exception of one comb of brood and bees containing the queen. If we expect to run for extracted honey we put a super with extracting combs between the two hive-bodies but above the queen-excluder. This increases the distance between the laying queen below and the brood, which now forms the third story. Forty or fifty colonies is the number usually gone over in a day. It is possible to work more rapidly, but careful and accurate manipulation is important at this time. It is necessary also at this and subsequent operations to open and examine each hive in regular order, so that none be missed. There are beekeepers who say they are able to know the condition within the hive by looking at the outside; but I am not yet that far along, and I find the time well spent in taking a peep either from below or by lifting out a comb or two.

If the colonies being examined are to be run for comb honey, the combs or foundation from the upper story are placed below with one frame of brood with the queen, the remainder of the brood being used to build up nuclei or weak colonies, all or nearly all of the bees having been shaken off to form a strong force of workers for the comb-honey colony. Two comb-honey supers are then put on, the lower one containing bait sections. This plan is similar to that advocated by Mr. Doolittle in his book on out-apiaries. Mr. Doolittle claims, however, that honey in combs from the upper story placed below will be carried up by the bees and used in building section honey. It does not seem to work that way here, for the bees will swarm rather than carry up much honey, especially if it is necessary to build new combs in which to store it. Moreover, even if empty drawn combs are used and a sudden flow comes on, the new honey will be stored in the combs instead of being built into the sections above, thus clogging the brood-chamber and inducing swarming. In my opinion it is better to use one drawn comb next to the frame of brood in order to keep the queen busy for a time, and then fill the remaining space with frames containing full sheets of foundation. Colonies so treated will normally need no further attention during the honey season, except to see that they are supplied with plenty of super room.

In eight or ten days we again go thru in regular order all hives run for extracted honey. Cells are removed from upper stories, those of the best stock together with the brood and adhering bees being used to form two-frame nuclei. The brood not needed for this purpose is left on the hive, and the upper story then becomes an extracting-super with only eight frames instead of ten. By spacing wide we dispense with about one-fourth the labor in extracting.

Colonies not heretofore treated are now likewise treated for swarm prevention, and later the brood is used to build up nuclei into full colonies. It will be observed that no time has been spent in hunting queen-cells in the brood-chamber; and as only a small percentage swarm, very little time is ever spent in climbing trees. In this system of management it must be remembered that the manipulation, to be successful, must be attended to before, not after, the bees get the swarming fever.

There are exceptions; but as a rule no further handling of the brood-chambers is necessary in the production of the season's crop. The work henceforth is chiefly to supply the necessary room and remove and care for the surplus. In taking honey from the hives we have found that the work can be carried on more rapidly by using bee-escapes than by brushing the bees from the combs, tho there are times (weather and other conditions being favorable) when the latter method is preferable. To avoid much lifting when heavy supers are taken off, a wheelbarrow is placed about twelve inches back of the hive, and with a swinging motion the super is slid across. When loaded, the wheelbarrow is run directly into the honey-house and the supers are again slid across to the pile with as little lifting as possible. This is the time of the year when I find it advisable to save my own back by employing a helper to do the "work." Gravity carries the honey from the extractor thru an opening in the floor to a tank in the basement where it is later drawn into 60-lb. cans. These are hauled home in the auto with a truck body, a load being taken each trip. We have not found it of any advantage to heat the honey at the time of extracting. We heat it only as it is marketed. We try to extract all the white honey if possible, and get the supers back on the hives in time for the fall flow, which usually constitutes more than half of the crop. In October we again extract, but reserve for fall and spring feeding at least one comb for each colony wintered. We also leave on the hive, until late in the season, one super of honey, preferably that which is not capped, for the bees to carry down.

As our honey is nearly all sold direct to consumers and to retail dealers, our busiest season is thru September, October, and November, for at this time orders come fast by mail, telephone, and otherwise; but selling the honey is another story.

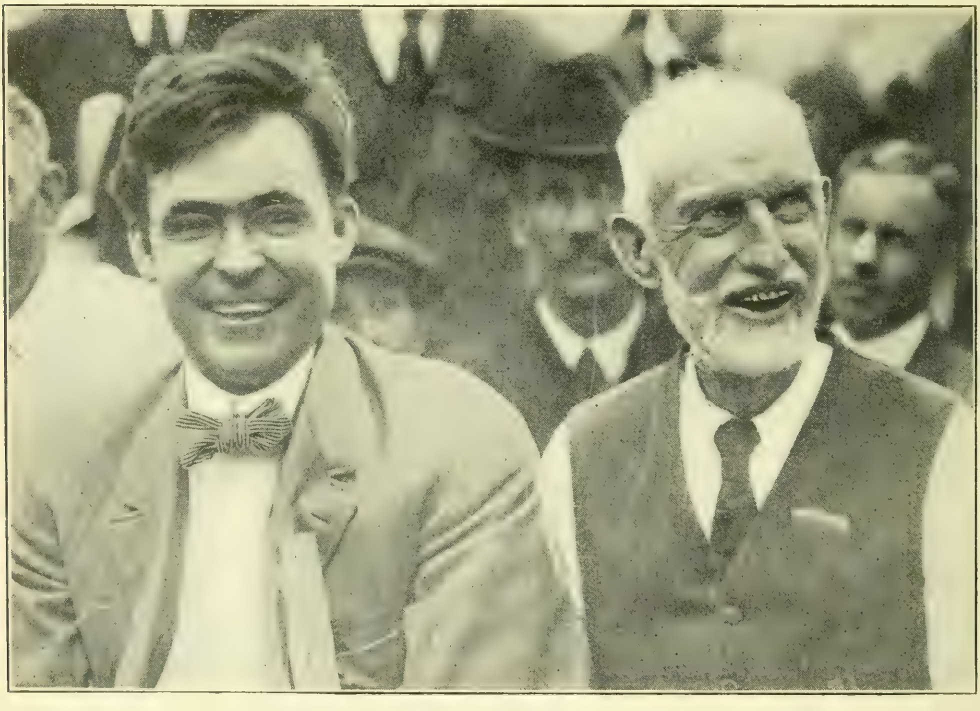
It has been my practice to cut down the number of colonies to be wintered to about 350 and to build up in the spring and summer to 450 or more, in this way reducing the labor and the amount of honey consumed. In preparing for winter the work is begun in August by removing old and inferior queens and in placing their hives above colonies with young queens, using newspaper and an excluder between, or by using the brood and bees to build up nuclei into full colonies. It is important to see that every hive is made strong in bees. Care must be taken, however, as cells allowed to hatch above an excluder may result in swarming even in September. In this way the old bees are useful in storing the fall crop and are out of the way before winter.

After the extracting in October is finished the colonies at the outyards are hauled in, in November, and about December 1 the bees are all carried into the cellar and stacked up around the wall five hives high, spacing the center of the cellar for better ventilation.

Fortunately I succeeded in getting rid of foul brood several years ago, and do not now have that to contend with. I usually manage to raise about two hundred queens each year. I find my queens long-lived and more vigorous than those purchased.

From this outline given it is not difficult to estimate approximately the actual time spent in handling 350 to 450 colonies. It is found well within one hundred days. In 1916, in which there was an exceptionally good clover flow, the time, including the few days when I had help in carrying bees and in extracting, was not more than one hundred days, and in 1915 it was considerably less. My crop last year amounted to about 30,000 pounds, notwithstanding the killing frost in the early part of September, which probably reduced the crop by 15,000 pounds.

Valparaiso, Ind. E. S. Miller.



J. H. Donahey, of the Cleveland *Plain Dealer*, and A. I. Root, as caught by the staff photographer of the *Plain Dealer*, at the beekeepers' field meeting that was held in Medina in July, 1914. What the two were smiling so broadly over no one can recall. But it is evident that they were "smiles that wouldn't come off. 'Nuff said."

GLEANINGS IN BEE CULTURE

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

"In which direction ought beekeepers now to work to better their condition? Taking beekeeping as it is, what does it most need? Honey varies in price but little from what it has been in the past twenty years, while nearly all the things necessary for the apiarist's livelihood have gone soaring to double and triple what they were ten years ago."

Much depends upon what our questioner means by better conditions. Every one, or nearly so, seems to have gone distracted over the dollar-and-cent part of our pursuit, as tho that were the acme of our existence. It is reported that John Jacob Astor once said to a man who was envious of his fortune, "Would you take care of what I possess for what you want to eat, drink, and wear?"

"No!" was the response.

"Well," said Astor, straightening up, "that is all I get."

"But," says one, "I am anxious for my children." Is it any worse for your children to toil for their living than it has been for you to do so? Let me change that. Would you deprive your children of the keen enjoyment you have experienced in building a home of your own by giving them one already built up? "Lots of money" does not bring happiness. On the contrary, it often brings discontent, and, if given to one who has not earned some money for himself, as a rule it spoils the usefulness to the world of one who otherwise would have been one of the pillars in the community in which he lived and in the nation. If we as beekeepers can secure for ourselves a comfortable home, tho it may be humble, together with something to advance God's kingdom in the earth, according as he blesses and prospers us, and with that be content, we may right now enjoy a little bit of Paradise.

No pleasure has ever come to me like that which has come thru success at last, after working patiently and perseveringly over some problem which confronted me in life, whether about the bees, the building of a home, or in trying to elevate mankind. He who is not willing to work patiently till success crowns his efforts, and in that patient work realize the truest enjoyment, is not the one to be of the greatest blessing to the world. Nearly all of our great men who have lifted communities and nations to a higher plane have come up from the humblest homes thru patient toiling, and hard study—perchance by the light of a pine knot.

Not long ago I received a type-written letter from a beekeeper who asked me to excuse the blunders, as he had written it with one hand while he tended the baby with the other. How many of the dudes and "calamity howlers" in the land would have done this without saying something about "bettering their condition," if they were to write under such circumstances? This man will doubtless rise to a higher plane than he could possibly enjoy had he been cradled in the lap of luxury.

Suppose the beekeeper does not live as well as a Morgan or Rockefeller. He has the pure air, the sunshine, and honest and honorable enjoyment, and, as a rule, gets a comfortable living. If the beekeeper is not satisfied with his condition as it is, let him spend a few days carrying hods of mortar to the top of some three or four story building, receiving therefor $1.50 to $2.00 a day, as thousands are doing. He will come back to beekeeping and thank God for the busy bees, even if there is now and then a poor season, and prices of other commodities are out of all proportion. Looking at the matter in this light, therefore, bettering our condition may mean raising our pursuit from the dollar-and-cent affair to where we shall appreciate it as one of the grandest pursuits God ever gave to man.

Taking beekeeping as it is, what is most needed are men and women who can see the heights and depths which are possible along the line of intelligent thought and enjoyable health in a vocation which brings happiness. Probably our questioner intended that I should answer only from a practical, financial standpoint; but it is well for us to remember that money-making is not all of life; that health, happiness, and correct views of life are of far more importance.

I am convinced that placing out-apiaries about the home yard, and working them for extracted honey, tends more toward success along the financial line than any other plan. Why I say work for extracted honey is that, if worked on the tiering-up plan, not enough swarms will issue to pay for looking after; and if the honey is all left till the season is over, little time is required at the out-apiaries during the swarming season, so that the home apiary can be worked for comb honey. By placing this thoroly sealed and ripened honey, taken off after the harvest is over, near the ceiling of a warm room for several hours, it can be extracted as easily as when first sealed, and a quality procured not obtainable in any other way.

Borodino, N. Y. G. M. Doolittle.

Letters from a Beekeeper's Wife

In the Garden, May 1, 1917.

Dear Sis:

The bees are flying every day now. I can see them dart past me on their way to the apple orchard, which is all pink and fluffy with blossoms. I never feel that the world is real this month—it seems like a dream world or Fairyland. There's such a lightness and buoyancy to trees in their new green, and the fruit trees on every hand are just huge, soft pinky bubbles that would disappear at the slightest touch. I wonder if the bees are as deliriously happy as they look when they come flying out of their dark hives after the long winter. How wonderful the world would be to us each spring if we had been indoors for five months and our memories were not long enough to hold over remembrances from the year before!

Rob is taking the packing away from the hives and is delighted to find his colonies in splendid condition — strong and vigorous. It certainly paid to give them plenty of winter stores and lots of packing. The only colonies in the home yard that suffered at all are the few that were at the end of the yard beyond the wind-break of evergreens. They are weak and two are dead. The colonies at that end used up a far larger amount of honey than the others. Of course it took more energy to keep them warm, and the honey stores had to supply the energy.

Mr. Hood brought an old beekeeper over here yesterday to see Rob. He is from way back in the mountains and this is his first trip from home. His wonder and delight over Rob's beekeeping appliances was pathetic. He keeps his bees in box hives! But the most curious thing about him was his big bundle of superstitions. Rob asked him how many colonies he kept, and he replied, "I don't count my bees—it's bad luck." Then he went on to say that last year he lost a good many colonies, that his little boy had died, while he himself was quite ill, and his wife was so worried and grieved that she neglected to go out and tap each hive and tell the bees of the boy's death. Of course it was only to be expected that the bees would die after such an omission! Think of really believing such things! I would like to venture that those colonies died of foulbrood.

It seemed as if some superstition cropped up every minute during the conversation. Rob asked him how much he sold his colonies for, and he said that down his way they never sold bees. Then he went on to tell how they manage a money transaction over bees. A prospective buyer will talk with a beekeeper about the value of hives of bees in a general way, casually inquiring what the beekeeper thinks his bees are worth and whether he would be willing to part with any. If the price suits him, he takes a team the next dark night and carries off as many colonies as he wants, leaving the money for them on an adjacent box. As soon as he has gone, the beekeeper, who in all probability has been on the lookout, goes out and finds the money, and every one is satisfied. Oh, yes! the money must be in gold coin—nothing else will do if bad luck is to be averted!

We shouted over these things when Rob told us, but there's a pathetic side too. Think of being bound by beliefs of past and out-grown centuries. I'm glad we are living in this good, free, and enlightened twentieth century. We all scoffed at superstition, but I made mental note that Rob has a horseshoe over the honey-house door and I can't keep from picking up a pin so that I'll have good luck all day! Don't tell any one that there is still a remnant of the fifteenth century in us!

After our mountain friend had gone yesterday I was cleaning the bookcases, and as usual could not resist dipping into a book now and then. I can see you shake your head over that girlhood trick of mine. I am afraid I am too old to be cured of it now! Among the books I found one on bees written by one Moses Rusden, "an Apothecary, Bee-Maſter to the King's moſt excellent Majeſty" in 1679. In his preface he talks about "many falſe proverbial ſayings" relating to bees; viz.: "That Bees are lucky to ſome perſons, and will thrive with them; but unlucky to others and will not thrive with them. That they muſt be bought with Gold, or Corne, or elſe muſt be given, or found; otherwiſe (forſooth) they can by no means be ſuppoſed to thrive. And that they are unlucky to be carried by water, and must be removed ſouthward, and many other ſuch ridiculous ſtories, not worthy the mentioning. When the true and only reaſon why Bees thrive not with every man alike, is either the want of judgment or care, or both, in thoſe who look after them; as appeareth by this proverbial inſtance, that when the owner of the Bees dies, then the Bees alſo (as if they had a Sympathy with their owners) will die ſoon after; which I have known, ſeemingly verified, by ſome ancient perſons who kept Bees, had skill, and looked well after them whilſt they lived, but they dying, the greater part of their Bees within one year after have died alſo, which happened not becauſe the owners died, but becauſe the skill and care of the Bees died with thoſe owners."

Wise Moses Rusden! He belongs to our generation and the superstitious friend of yesterday belongs back with those other Englishmen of 1679 who, according to this Bee-master to the King "have run into many errors and by-paths of ignorance."

Zounds! Methinks this epiſtle is of unſeemly length, yet I do humbly beſeech thee to accept graciously this grain of Incenſe offered with much devotion by your Majeſty's moſt loyal and most obedient Subject and Servant, Mary.

The Purpose of Laying-worker Drones

Why do we have laying-worker drones? Allow me to give my opinion, which is, that thru these drones lies our greatest opportunity to improve on the qualities of the bee. Why? Because, in almost all animal and insect life, the Creator made male and female capable of caring for all their needs, such as gathering and storing food and making for themselves suitable shelter or whatever they might need for their sustenance, or else he placed them in the midst of all their requirements for their existence, that they might live in the midst thereof and multiply. The honey-bee is an exception to the rule, for here we find that neither the male nor female takes any part in the gathering or storing of their food or preparing for their protection from the elements, but are looked after and in most part fed by their slaves, the workers. Now, bear in mind that neither the father nor the mother has any tendency or instinct to take notice of or feed upon blossoms, or to gather food for themselves, or help to protect themselves in any way; yet they are supposed to produce an endless supply of workers, the great ambition of which is to do the very thing which their parents have no instinct to do. If it were not for the laying workers the usefulness of a colony would be at an end when they become queenless. However, they have one function yet to perform before they cease to be, and that function is to do their part in keeping their species from developing into a lot of lazy idlers. To accomplish this, the workers, after a certain length of time (about 28 days), begin laying eggs hatching nothing but male bees, which are allowed to exist unmolested in the hive to the end of their natural life, and perhaps become the fathers of a good number of the young queens in their locality. These drones, as we know, are the product of the mother worker alone. Having no father, they should possess the traits of the worker bees, or at least their progeny would be more inclined that way than the progeny of a drone whose ancestors for countless generations back had on the maternal side done nothing but lay eggs and be looked after, and on the paternal side live perhaps for but a few days, fly out, and meet their mate and fate.

As to worker drones being inferior or short-lived, or producing bees that are, I do not believe, for the reason that a worker bee is tougher, and can stand more hardships than a queen can. The experiment of comparing the longevity of their drones would be interesting. It must be understood that this article is dealing exclusively on theory; and we all know that theory does not always work out in practice; but if I had the time to do some experimenting along this line I certainly would enjoy it. It may take a good many bee generations to make any noticeable difference. It might develop the combative qualities, but I don't think it would. One cross might give good results while more would be too much of a good thing.

I happen to think of the mule for an illustration. How much has the mule improved as a work animal on account of the generations he has been used for that purpose? It has been said that "he is neither proud of his ancestry nor hopeful of his posterity," and surely the same could be said of the posterity of the working bee unless we allow the drones of the workers to perpetuate their working instincts.

Springfield, Mo. W. J. Purvis.

[Mr. Pritchard suggests, in answer to

the above theories, that we do not know that laying workers ever work, in the sense usually meant by that term. That is, we do not know that a field bee ever becomes a laying worker; the little evidence available all points the other way.

Obtaining data on questions like this is very difficult owing to the impossibility of controlling the mating of the queens. If the greenhouse experiment alluded to on another page is a success, the problem would be much simpler.—ED.]

Painting Hive-bottoms

Hive floors or bottoms, whether placed directly on the ground or on stands of some kind, are more subject to decay than anything else about the apiary. Most beekeepers, whether they are managing a few colonies or several hundred, seem to think that anything will do for a hive-bottom, and, since it is poorly constructed, is not worth painting.

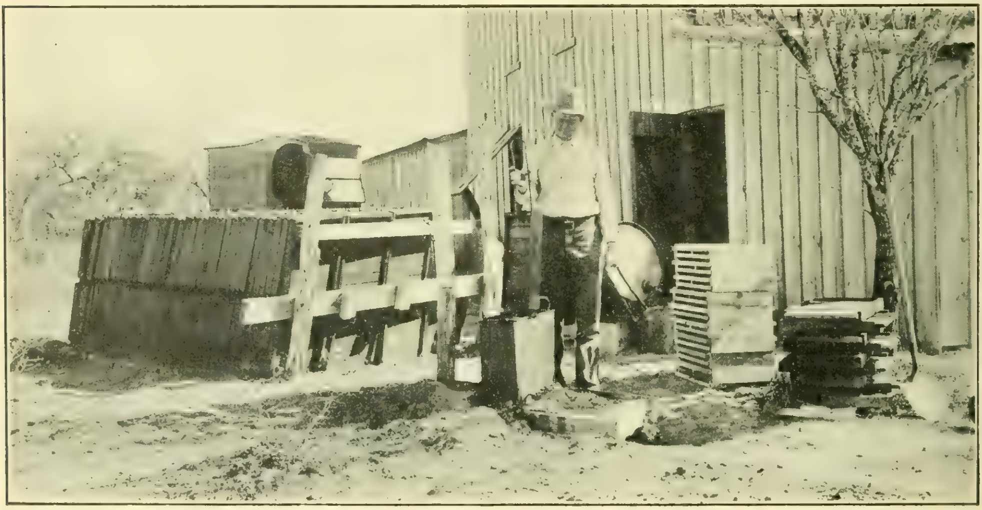
Where only a few are to be painted, the same paint that is used on other parts of the hive is all right; but beekeepers who count their colonies by the hundreds should use black roofing-paint or something similar. This is well suited for this purpose, and not nearly as expensive as the lead and oil paint. There are some hive-bottoms in Liveoak County that I dipped eleven years ago. These are still in use. Ordinary coal tar serves very well and is readily secured.

For several years I have been using a roof and iron paint. The price was 37 cts. per gallon delivered, altho it has advanced now. I have also used water gas-tar, a residue from the manufacture of gas. This costs only $4.00 a barrel. It makes a very good coating but requires nearly a month to harden enough to handle on a warm day. This season I added five pounds of pitch to the gallon. This cost me 1½ cts. a pound by the barrel. I hoped that by this method I could get a good thick coat at one operation, while with the tar alone two dippings are required, and the job is prolonged about three weeks for the two operations, besides the extra labor.

I use a dipping-vat as shown in the illustration. This is 24 inches long, 10 inches wide, and 30 inches deep. This vat is seamed at the end. The preparation has to be heated over a fire; and to protect the seam I dig a pit for the fire and lower the vat about 10 inches below the surface of the ground, then plaster all around with mud. The temperature often runs so high as to melt the solder if not protected from the fire.

The vat should never be more than two-thirds full; otherwise, when the temperature runs too high it might boil over. None of these paints seem to be injured by heating, tho it is not necessary to heat more than somewhere near the boiling-point in order to make the liquid thin so that it will penetrate into every crevice.

After the boards are dipped, they are



Dipping hive-bottoms in hot roofing paint.

FROM THE FIELD OF EXPERIENCE

stacked nearly straight up, as shown, the entrance end resting on sheets of roofing-iron lying on sloping ground. The boards are separated by pieces of comb-guides at each corner. In this way the paint drains off into pans made for the purpose set into trenches under the ends of the roofing-iron. The straps of iron that bind the sheets of roofing make good prongs with which to handle the boards.

When dipping, stack a lot of boards to the left; grasp one at the entrance end and dip down past the center, then quickly change ends, and, holding the rear cleat with the prong, dip the other half. Rest the corners on the side rails of the vat for a moment, then let an assistant take it away. There are about 340 boards in the stack shown in the illustration. With the help of a Mexican I dipped them in about five hours.

Sabinal, Texas. J. A. Simmons.

Moving by Auto

In this county it becomes necessary frequently to move our bees—in fact, my whole outfit is so constructed that I can move at any time of the year without any fussing to get ready. All parts are made to fit so that the labor of getting ready is so reduced that I need no help in moving the yard.

I have a full outfit of moving screens for the top and bottom of the hives. These telescope over the hive and fit tightly enough so that they are absolutely bee-proof one way or the other. Each moving screen has a 1-inch space beyond the edge of the hive. The screens do not need to be fastened in place. I once shipped 65 colonies of bees from San Diego without fastening a single screen.

I do all of my hauling with an auto, and would not think of being without one now, as it is certainly my faithful " busy bee." I built a hauling-box on the back of the car, which is equipped with a tin bottom on the floor to make the hives slide in and out easily. A large jockey box on the running board takes care of smokers, veils, hive-tools, canvas, and everything else of that nature.

I haul 30 shallow hives of bees at a load with only enough bottoms and covers to make the load fit tightly. The length of the haul is seven miles, and as the valley is as level as a floor, no hills to contend with, I can haul two loads of bees, also two loads of bottoms and covers in one day. I haul the latter first, and place them so that when I come with the bees I can set a colony by each floor and cover. After the last load I lift the hives out of the bottom screen, after giving a couple of puffs of smoke; contract the entrances, put canvas on top of the upper screens, then the cover and so on. Everything is left in this way until I get each hive on the new location. I then haul the honey, giving an extra story of honey to each colony. I bring the other material whenever it is convenient.

Imperial, Cal. F. J. Severin.

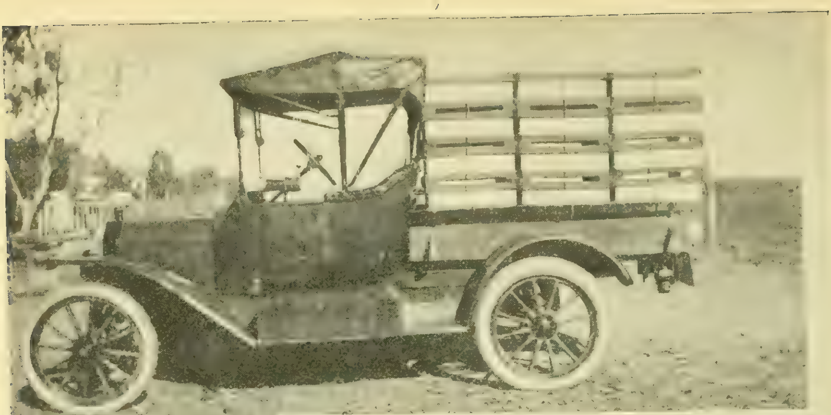
Superseding During a Honey-flow

Is it practical to change failing queens during fruit-bloom without any cessation in egg-laying? Queens can be successfully introduced during clover, basswood, or any other main honey-flow. I have changed or introduced many queens during the above honey-flow simply by taking two combs of hatching brood from the colony with queen to be replaced, setting them in a hive by the side. The old bees will all fly back, making it easy and a safe way to introduce the queen as only young bees are left.

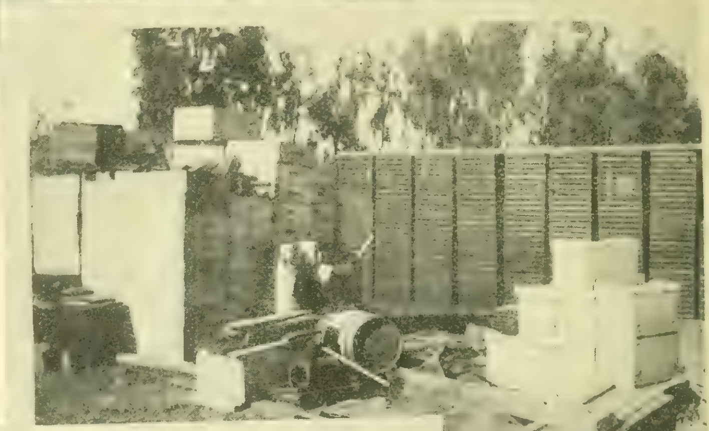
When the queen gets to laying nicely I set the frames with brood, bees, and queen back in the hive from which they came, removing the old queen at the same time, to take the place of the two combs of brood removed. Slatted dummy frames are better than combs that are empty, as all the more honey will be carried up in the super during the short time the two combs of brood are out.

By the above plan there is no setback to the colony—in fact, there is a small gain, as both queens will be laying for a few days and there will be no let-up in storing. One might imagine that the plan would be too much work, but there isn't, and, above all, it has never failed with me.

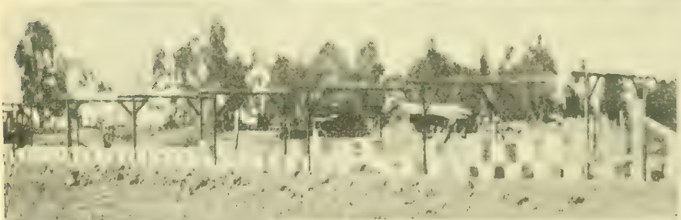
This plan of queen introduction can not be carried out so well during the early part of the season, as the brood can not be spared so well, neither is the weather as favorable. It seems almost impossible to change queens early enough in the season to be of much benefit the same season, altho helping a colony with a poor queen by adding brood from other sources, with the introduction of a young vigorous queen in place of the poor one, might result in



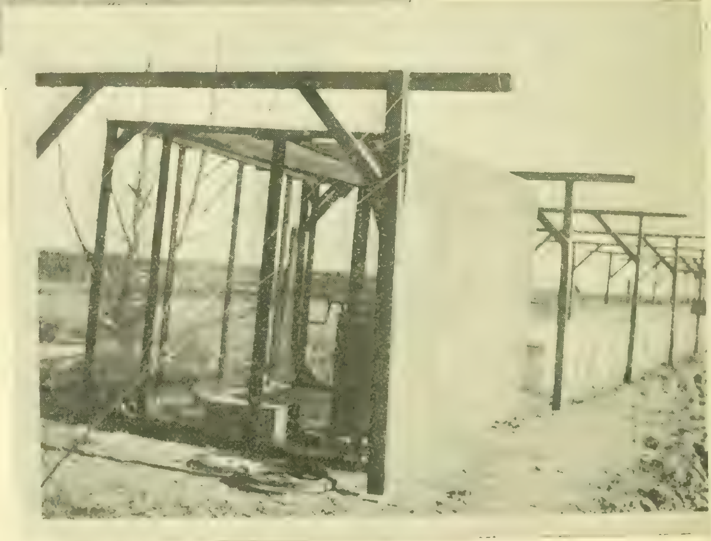
F. J. Severin's Ford with the carrying box large enough for 30 shallow hive colonies.



A backyard painting scene. In California much of this kind of work may be done out of doors. In the right background 300 moving screens are stacked up ready for use any time.



The typical shed apiary much used in the West.



The framework is covered to make a shade; and if desired one end may be screened in to serve as an extracting room.

FROM THE FIELD OF EXPERIENCE

Sunrise Apiary on a southeast slope in the heart of the town of Iowa City.

no small gain, especially when the harvest is bountiful and lasting. A colony left with a failing queen might amount to almost nothing. Another gain by the change of queen is the amount of honey that will necessarily be removed from the brood-chamber to the super. In most apiaries there will be found an occasional colony that has a queen which, unless replaced, will lessen the crop. A. C. GILBERT.

East Avon, N. Y.

A Profitable City Apiary

"Sunrise Apiary" appears at first glance to be located in a forest. Instead, it is less than four blocks from the business section of a city of over ten thousand people. It stands on the terraced bluff overlooking Ralston Creek, in Iowa City, Iowa, facing the southeast. Mr. Eckbaring, the proprietor, says that his bees can get to work very early in the morning, and for this reason he selected the location, and the name suggested itself.

The workshop at the top of the bluff houses the supplies and the honey. Supers loaded with the fall flow of honey, to the amount of three or four hundred pounds, stood on the floor at the time of the writer's last visit, and the summer flow was considerably greater.

Each super is numbered, and each queen is registered, so that Mr. Eckbaring can keep an accurate record of the production of each queen. He caters to the local demand, producing both comb and extracted honey, the proportion running about half comb and half extracted. He remarked rather quizzically that, when he ran out of comb honey, people began to call for it; and when he ran out of extracted honey, the demand began to rise. He finds a ready market for his entire production, relying entirely on customers who come to the apiary for it. He states that he makes on the average $5.00 clear on each hive, or thereabout, each year.

White clover is the chief plant from which the honey is produced—smartweed, goldenrod, and even cockleburs furnishing some honey also. Years ago, at Riverside, basswood was one of the principal sources of honey; but the nearest trees to Iowa City are at least ten miles away, and most of the basswood-trees have been cut down. C. B. ISAAC.

Iowa City, Iowa.

FROM THE FIELD OF EXPERIENCE

The Cause of Swarming

J. E. Hand's article in the July 15th issue for 1916 has inspired me to set forth some of the causes of swarming as I see them.

It should not be necessary for me to say that swarming is only obedience to a law of nature, the law of reproduction. Many of the writers on swarm control have seemed to disregard this, yet it is a law that must be followed by all living things or the species becomes extinct. In most higher forms of animal life, sexual relations have a direct bearing upon reproduction. In case of bees this relation is only indirect.

In many forms of life individuals can exist alone, but not so with bees, as their existence depends upon their ability to maintain a group sufficiently large to provide for their needs and maintain organization as a perfect unit. Swarming or reproduction occurs only when every need of the unit has been provided and when there is a surplus of bees sufficient to establish the new unit without impairing the existence of the parent unit, or what we call the parent colony.

That the bees' greatest mission is the fertilization of plant life thru the distribution of pollen seems sure, for the high tide of bee life comes at the high tide of blooming plant life and ebbs with its failure. With the first flowers of spring, activity begins within the hive and breeding is immediate. The more the flowers bloom the faster the numbers of bees increase until the hive becomes overpopulated.

The presence of nectar or pollen in the flowers is the inducement nature offers the bees to make their visits, and more visits are made when the nectar is scanty than when it is bountiful, hence the less inducement for more bees and the less tendency to breed rapidly. As the nectar increases, breeding is increased accordingly.

When a colony reaches the swarming period the bees may be said to have reached the zenith of their activity, for at this point the hive is well provided with brood, the majority of which has been sealed. Thus there has been an additional force put to idleness, as the nurse bees have been relieved of their activity in feeding the multitude of larvæ, which were a constant care while the queen has been hurrying the work of filling all available space with eggs. She too has been relieved of the heaviest of her burdens and her labors consist in filling the cells that hatch from day to day, with eggs. There is little available room in which to store, more bees are hatching daily, and idleness begins to set its pace with the colony, due to no fault of the bees. Their desire to get busy culminates in the sudden appearance of queen-cell cups which are at once supplied with eggs that a new mistress of the hive may be provided. Of course when the swarm issues the bees are accompanied by the old queen, the mother of the whole family.

V. H. Eckbaring, proprietor of "Sunrise Apiary."

From day to day the congestion becomes steadily worse, as the young queens develop in their cells and idleness becomes greater as the days go by until a part of the bees are forced to "hang out." This hanging out is widely known as the sign of swarming, yet few have stopped to consider the cause of the sign. Eventually the time arrives when it is useless for idleness to continue any longer; and as all preparations for the safety of the parent colony have been completed by the maturing queen-cells, amid great excitement the bees swarm out, forming the new unit. The queen among the rest joins in the rush and within a

FROM THE FIELD OF EXPERIENCE

short time they are out as a complete answer to the law of reproduction.

After issuing, the bees of the swarm take up their work in the new quarters where, as nature evidently intended, the abode should be supplied at once with the requisite amount of comb for the needs of the colony. Therefore we find that the supreme effort of the bees is bent in that direction, and at no other time is there displayed such zeal for comb-building.

The requisite amount of comb having been completed with sufficient stores to carry the bees thru the dormant state of winter, breeding slowly wanes as the flowers fail. There is no tendency to build again in the established colony. The bees breed and gather honey to fill the comb provided; but when it is necessary to build more comb, nature has ordained that the bees be inclined to build in new quarters, as the work of the established unit in that line seems to have been accomplished.

Redlands, Cal. P. C. Chadwick.

To be continued

My Folder and Foundation-fastener

The illustrations show my section-folder and foundation-fastener. Most of my friends think it a commercial possibility, but I do not, for it could not be made to sell for the price of other machines, and, besides, beekeepers are a "hard-headed bunch" (I'm a beekeeper myself), and had rather get along with what they already know how to use. When putting up sections with this machine the operator sits close to it on the lamp side. The sheets of super foundation are cut into four equal parts. For the first section a piece a half-inch wide is cut off one of the equal parts mentioned and this is thrown aside. This leaves the piece the right size for the top starter. A section is picked up, V cut up, placed under the centering-block B. One side is bent up with the left hand and two sides with the right hand, and drawn into the form. The right pedal being pushed down by the foot brings the hot plate into the section. This is adjusted so that it strikes the section at the point where the foundation is to be fastened. The foundation is then placed against the centering-block and pushed down on the hot plate. The pedal is then released and the hot plate springs back, the foundation being pushed down on to the side of the section and fastened.

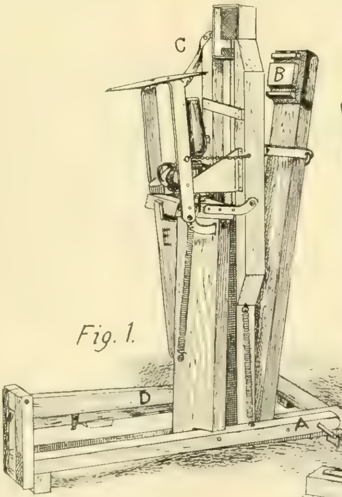


Fig. 1.

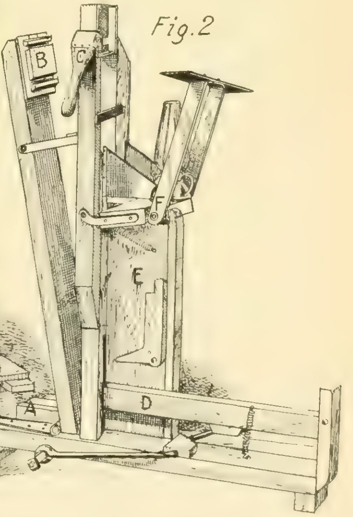


Fig. 2

The fourth side of the section, which is the lower side when in the super, is now bent down and the corners forced together with the hand lever.

The section is then pushed out of the form and reversed with the handle on the block and brought back into the form. A large piece of foundation is fastened to the bottom in the same manner. Raising the right pedal with the foot raises the hinged table supporting the hot plate. When this comes up one-half inch (this may be adjusted from one-quarter to three-quarters of an inch) the leg E springs under and holds it in that position. The pedal is then pushed down, which brings the hot plate in position half an inch above the bottom of the section, cutting the foundation off at that point. The section is taken in the thumb and finger of the left hand at the top, and the left pedal pushed down with the left foot. This removes the centering-block, pushes the section out of the top of the form, and trips the ledge holding the hot plate so that a spring may bring it down to its first position ready for the next section. The finished section is then in the left hand, right side up, and a piece of foundation the right size for the upper starter for the next section in the right hand.

The hot plate when moved into the section slopes toward the point where the starter is to be fastened, and when it swings back again nearly all the melted wax is wiped off on the edge of the starter. The blade is thin and sharp, and right on a section, so that the foundation itself has to be pushed not more than 1/16 of an inch to strike the wood. In some machines the hot plate has to be permanently adjusted at the height the bottom starter is cut off, which is at least half an inch. This means that the starter has to be moved down that distance each time before it touches the wood, which gives a chance for it to bend in or out or go down cornerwise. In my machine the starter is located exactly where it is wanted. Floyd Markham.

Ypsilanti, Mich.

* * *

The Shaken-swarm Plan Perfected

Well aware as I am, that a veteran of the shaken-swarm plan, M. A. Gill, makes a practice of giving one or two frames of brood to each shaken swarm, the remainder of the hive containing frames with starters only, yet for those who cannot secure satisfactory combs from starters, Mr. Gill's plan is not the best.

In this locality, no plan yet known, by which the new shaken swarm is given any brood, is satisfactory. When the plan was so much agitated, a few years ago, many spoke of the effort to swarm out within a day or two after shaking as a great drawback to the plan, and so it is, unless overcome. I have made hundreds of shaken swarms, and have produced carloads of honey from such swarms, naturally trying to practice the best methods, requiring the least attention, aside from supering, after shaking. The best results from a single colony, in all our experience, have been from shaken swarms—one for comb, the other for extracted.

In a yard containing 750 lbs. of bees on the arrival of the flow, and with conditions favoring content within the hive, it probably makes no reduction in the total yield if the field bees are mostly in 100 rather than 150 hives. Therefore our plan is as follows: Have the colonies in pairs, then shake most of the bees from both into one new hive of wired frames with full sheets of foundation except one frame of comb, which may be empty or contain some honey (not a cell of brood). Above may be one or two section supers, as required. Run in the younger queen with the swarm.

Between the hive and the bottom-board be sure to put either an empty shallow super or an empty hive-body. Two or three days later, return to the yard and remove the empties that are below the new brood-nests. Some small spurs of comb may be built, which must be torn off.

The bees are satisfied and will not swarm out nor loaf, but will work with full vigor.

Another fairly good way is to cage the queen in the shaken swarm, so that in about 2 to 3 days the bees will eat out the candy and release her, by which time the bees will have given up all notions of swarming.

Briefly, this is the key to the successful use of the shaken-swarm plan for comb honey: A powerful force of bees; a hive with full sheets of wired foundation, except one frame of comb; not one cell of brood at the start, from which queen-cells may be begun; empty clustering space beneath for two or three days; and a good flow.

Meridian, Idaho. E. F. Atwater.

* * *

A glimpse of some of the readers of Gleanings in Cuba. On the picture we read, "To Mr. A. I. Root. 'Daisy,' 'Johnny,' and 'Clara Trista.'"—Santa Clara, Cuba.

FROM THE FIELD OF EXPERIENCE

A Comb-Honey Method Similar to Extracted-Honey Production

Dr. C. C. Miller:—What do you think of this method? I operate my colonies for extracted honey in a city where the flow is slow and of long duration. We average from 30 to 50 lbs. light grade; use the ten-frame Langstroth hive for early breeding, and shallow supers for surplus honey to keep what little clover honey I get compact and separate from fall honey.

Queens must continue breeding thru the summer to keep up the working force, owing to the drawn-out flow.

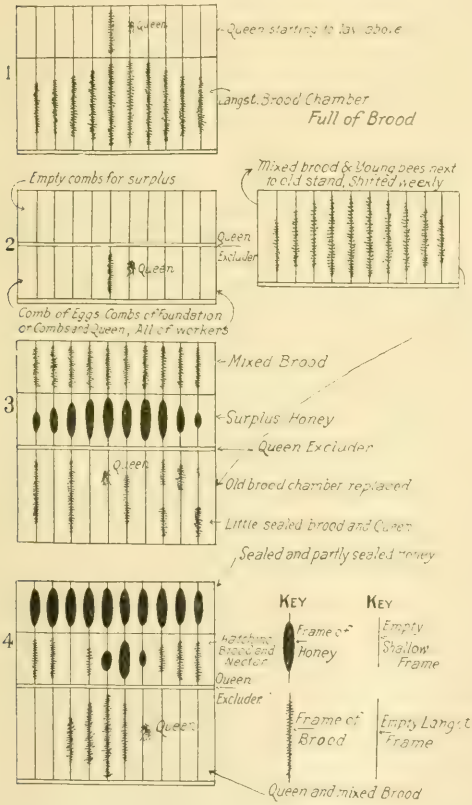

1
Queen
Queen starting to lay above
Langst. Brood Chamber Full of Brood
2
Empty combs for surplus
Queen Excluder
Queen
Mixed brood & Young bees next to old stand, Shifted weekly
Comb of Eggs Combs of Foundation or Combs and Queen, All of workers
3
Mixed Brood
Surplus Honey
Queen Excluder
Queen
Old brood chamber replaced
Little sealed brood and Queen
Sealed and partly sealed honey
4
Hatching Brood and Nectar
Queen Excluder
Queen
Queen and mixed Brood
KEY
Frame of Honey
Frame of Brood
KEY
Empty Shallow Frame
Empty Langst Frame

Fig. 1 represents the main brood-chamber filled with brood, and queen starting to lay above. Honey is starting to come in.

Fig. 2. Main brood-chamber is set next to old stand and shifted weekly to throw the workers into the original colony. When first removed all but two frames of bees are shaken into a shallow super of foundation with queen on a frame of eggs and an empty frame to catch pollen. Over this a queen-excluder and a super of empty drawn-out combs is placed. Any colony that is crowded in the brood-chamber and whose queen has not gone above to lay is treated at this time by taking a shallow frame of brood from a colony having more than one to spare.

Fig. 3. When lower section of frames of foundation is drawn out and well filled with brood, and perhaps most of sealed brood in the Langstroth hive is hatched, I reverse these two shallow sections, put the Langstroth hive back on stand and place these shallow sections on it. The queen is put in the Langstroth hive under an excluder.

Fig. 4. When middle section is well filled with honey, exchange positions with the top super, which is becoming empty of brood daily.

Any method I adopt must contain the principle of shallow supers for surplus and a Langstroth hive for early breeding, allowing the queen free range in both shallow super and main brood-chamber, also keeping her above an excluder 10 days, then putting her below. Methods similar to these do not seem to prevent swarming here. Most of the brood must hatch on a separate stand to be effective.

After gleaning most of the methods in print I intend to adopt this method, which is no more nor less than a comb-honey method for extracted honey.

Using drawn comb in shallow brood-chamber would be more desirable than foundation but I have only one set of drawn comb per colony at this time.

Any comments or criticisms will be greatly appreciated.

St. Louis, Mo., Dec. 9. J. H. Fisbeck.

Dr. Miller replies:

Your scheme is ingenious, and your diagraming especially commendable. The first question that arises is whether you are really sure that it is necessary to have the brood hatch on a separate stand. Have you thoroly tried having the queen in the first story with only one brood, and excluder over the first story, and the brood on top of all other stories? Did you at the same time have abundant ventilation at the bottom by having the hive raised on blocks or by other means? Did you at the same time have ventilation between the first story and the second, between the second and the third, and so on, and then ventilation under the cover? If you have not done so it would be well to try it out before adopting a plan involving so much trouble.

It looks as if your plan should be effective, and yet until a plan is submitted to the bees one never can feel sure just how it will turn out.

At No. 2 you say, "Main brood-chamber is set next to old stand, and shifted weekly to throw workers into original colony." I suppose that means that the main brood-chamber will be jumped each week from one side to the other of the stand on which the queen is. Then no doubt your expectation is that all field-bees from the old brood-chamber will join the queen, while none of her fielders will desert her. May be it will pan out that way; may be it won't; depends somewhat on surrounding objects. On an open plain, with no surrounding objects within two or three rods, I should expect that when you make the first jump the jumper will gain more by it than the jumpee.

The queen is confined for about 3 weeks to the shallow story while the main brood-chamber is jumping. If the shallow story is shallow enough, *some* strains of bees might conclude to swarm from being too crowded.

As already said, you can tell only by trying; and if your plan doesn't turn out as well as expected, it will be only one more to keep me company in the many times I've been fooled. But there's lots of fun in trying. C. C. MILLER.

How Young Queens Help

Our scheme for swarm control when running for comb honey in out-apiaries will not work in all localities, for it failed for us in San Diego County, Cal., also in Kerr County, Texas, where the honey-flow is slow and long drawn out. It has been a success with us in Mesa County, Colorado, also here in northern California where our surplus comes the last two weeks of June, July, and August, and mostly from sweet clover and alfalfa under irrigation, and where bees live from hand to mouth until the honey-flow begins in earnest.

During the first part of May we start queen-cells as per Doolittle's plan in "Scientific Queen-rearing," that is, in grafted cells in upper stories of very strong colonies with queens below and queen-excluders between. Not less than 100 cells are started for 150 stands of bees, so we are sure to have plenty. We do not dequeen, but in about eight days we go out again and place empty hive-bodies on one hive of each pair of hives in the apiaries. This hive-body is placed over the hive containing the *fewest* bees and the poorest queen. We try to have all our hives in pairs. Two frames of brood are raised from lower story and placed in the upper story with queen-excluder between. The next day, if the weather is fine, we put a queen-cell between each two frames of brood raised, and go to the next apiary, which we work the same way. Four or five days later, we return and take out the queen-excluder from each hive that has hatched a perfect queen, and that perfect queen or the bees (we do not know which) does the dequeening. From those that have not perfect queens, or for any reason did not hatch at all, or were destroyed, we change the upper hive over to the other hive of that pair and try them with another queen-cell which has been brought from home. Not many fail the first time, but there are always a few.

In this way by the first of June every other hive in our apiaries is two-story and we see to it that each has a young laying queen. This time is about our swarming season; but we always feel quite sure of these young queens, so we look after only the old queens at the side. This we do every trip which is about every eight days. As soon as we find a colony that has started cells or eggs in cells we pick it up and set it back ten or fifteen feet, throwing all the worker-bees into the hive with the young queen with her double story. This cures the old colony's swarming-fever by robbing it of most of the field bees. By this time the honey-flow is on in earnest; and when it does come in earnest, all old queens are moved back whether they have contracted the swarming fever or not, throwing all their field-workers in what we are pleased to call our comb-honey colonies. They are sure some colonies, but their upper hive-bodies have been taken off and placed over the old queen; and from two to four (it takes this many to hold all the bees) comb-honey supers put over the young queen; and as the bees have been used to going above, they go right to work. In a good season they make from four to thirteen supers of comb honey each, twenty-four sections to the super. They average about seven supers each, while our old queens give us from one to three supers each of comb honey, for we remove that upper story as soon

FROM THE FIELD OF EXPERIENCE

as they are strong enough and give them a comb-honey super. The bees being used to going above go right to work. We just drifted into this method some six years ago in Colorado. Where our honey-flow is in mid and late summer we have never failed in getting a crop of comb honey with the exception of one year here two years ago when the grasshoppers took everything.

I do not know whether this plan is old or new; but, as I said, we just worked into it gradually until we proved it a success, if the honey-flow came at the right time. We always try to get the best breeders and use a different breeder from a different yard each spring. It is our experience that we can get more honey from a hundred and fifty colonies of bees put in the very best shape we know how, than we can with from 300 to 400 stands kept in the slipshod manner. Our bees are 32 miles from home and in two yards. I use a Ford car with truck-body. We used to use a one-ton truck, but it was too expensive for our long runs. We like the Ford for our work the best.

Hornbrook, Cal. RAY D. TAIT.

Can Bees be Kept in an Attic?

Why, certainly! I did it, and had a gorgeous time, with the accent on the gorge. Also, I wrote it all up for the *Atlantic Monthly* in two articles—" The Beattitudes of a Suburbanite," and " A Crisis in Royalty," which you'll probably find on file in the public-library shelves. But in case you don't—or haven't one—I'll epitomize.

I began with one hive, as a raw beginner too. And my wife was dumfounded when that hive came home by express! She wasn't wholly reconciled to the unconventionality of the idea, either. It seemed altogether too much like " bats in the belfry," and " what would the neighbors say?" for we lived on a much-traveled street in a suburban city. To settle that point right now, altho that first hive fronted on that same street, it was years before any neighbor except " next door " knew anything about it; but when fall came, and we had 18 pounds of nice comb honey for our own winter eating out of that one hive, the household had a sudden change of heart.

So next year I enlarged operations, fitted out a little attic room for it, and began business with a boom. That I'm not doing it now hasn't anything to do with the attic point, but to a civic situation which I shall write up later, and, most of all, to a bull-headed Irish city forester and his spray-tank. But of that, no more just now.

My experience and luck led me into a combination that was pretty ideal. I had a room, dark as a pocket. I put a skylight in the roof, with a movable copper-wire mosquito-frame in it. That gave all the light needed. Then I set stanchions around the two sides next the slanting roof —a corner room—with mine own fair fingers, and a stout bench at the right height, so that three supers could be tiered up on a hive yet not touch the roof-slant. The hives were on that bench, and each had a wire-net frame above the super, under the cover. Thus I need only lift off the cover to see what was doing in that super. The bees couldn't get out to bother me, and my looking didn't bother them. If any did escape in handling, they soon flew up to the skylight and out thru a bee-escape. When the thermometer went up to the high nineties, that room always was reasonably cool, with the foot of space between roof and hive and the open skylight for ventilation. In wintering, the skylight was closed, and two or three peels of newspapers tacked outside of each hive permanently sealed it from cold save what came in at the entrance.

Now, that entrance was a gem—a triumph. They were " Danz " hives; entrance the full width of the front, normally. So I made a broad flat trough, as wide as the hive, about four inches high, outside measurement; wire net stretched across the top, at the hive end; an extra cleat across left a slot into which a zinc storm-door could be slid that would narrow the entrance to 6 inches by half an inch high. Another just like it at the outer end of the trough could also be closed blind, if for any reason I wanted to pen them in for a few hours. In winter it had a storm-door like the other, thus keeping out a lot of useless cold.

Now, that trough was about 3 feet long, more or less, and went horizontally right thru the sloping roof to the outer air. I built a port-hole casing round it, with an outer slope sharply down to keep rain out, and with that slope sanded after painting, to give foothold up the 6-inch rise, one trough to each hive, 8 inches apart.

What did I gain by it? First, the bees had the whole slope of the roof below the ports for an alighting-board; and they used it too. Next (to them) they were hived in a cliff, in a singularly convenient little cave; and they were thoroly happy and content, 2½ stories up from the ground, fronting east and south. It was a most fascinating sight to lean over the trough, and watch that hurrying little army of workers rushing in and out. I don't remember ever seeing them bunched and loafing around the entrance, altho I did in the original hive, less advantageously placed. In a room near by was a window. I made a wire cage to fit it, projecting a couple of feet, and it brought me within 4 feet of the nearest hive-entrance, where I could lean out and watch the young bees taking their baby steps in aviation. That was fun too! One day a kingbird appeared, roosted on a finial of the roof, then came down like a hawk from behind the chimney and whirred around among those little bees, and back to his roost with a mouthful. Had it been just for once I'd passed it; but it wasn't. He meant to be a regular boarder. So I ran down, grabbed the children's toy air-rifle, and some shot, and went out for some target practice of my own. I didn't hit him; but the rattle of shot close around him gave him an idea it was unhealthy, and he left—for good.

I spent a good many joyous hours up there with my bees, with the usual ups and downs of beginners and ultimately got up to 70 pounds yield—comb honey—for my best hive, with intent to increase the number to six—all the room would hold. Some day I'll tell you why I didn't. But it hadn't any earthly thing to do with the attic-use, let me repeat. *That is a positive success.*

Boston, Mass. JOHN PRESTON TRUE.

Some Clipped Queens that Lived to a Good old Age

On page 909, for Nov. 15, I notice that Herbert Marten has trouble clipping queens. We clip the wings of all queens (both sides short) and then introduce them after sundown at the back of the frames, with a puff of smoke. I lost one last season in a colony which refused to accept any queen, and that was the first and only one I have lost in many years.

I handle the brood-frames, but do not touch the queen because of propolis on my fingers. I have an assistant who has been with me since 1910 and she can clip a queen to the queen's notion and has never harmed one.

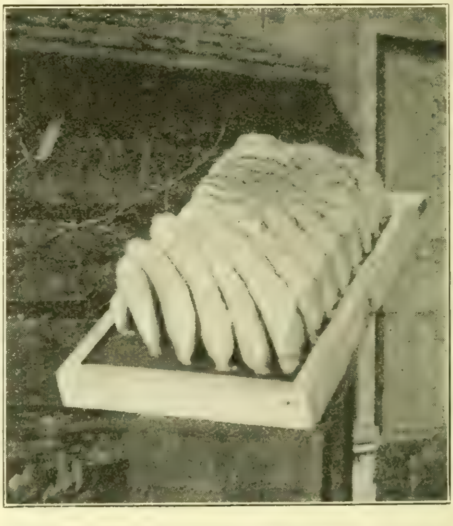
We catch the queen by the wing with the thumb and first finger of the right hand; then take her by the shoulder between the thumb and first finger of the left hand, head in and feet down, and extend the second finger of that hand under her, so she will put her feet on that finger and not over her wing; then she can be safely clipped. One of my queens lived more than eight years. She was clipped six years of that time and safely changed to a queenless colony the spring she was eight years old.

I now have a 1911 queen with a strong colony. She was clipped in 1912, and in early spring of 1913 I divided her colony for queen-rearing and let a friend take the queen to a queenless colony. In late summer of that year he returned her to me, and I put her in a queenless colony where she is now.

Another queen from which I have raised some queens for two years past was hatched in 1912; has had no wings since early in the spring of 1913, and is the best one I have. I think a queen properly clipped is as good without wings as with them, and I will continue to clip all wings short so that the queen will not attempt to fly and get lost in the grass, but will remain on the entrance-board in case a swarm should go out. J. W. NICHOLS.

Dayton, O.

* * *



Natural comb built under a hive. The bees got underneath thru a small opening and filled the whole space solid. Besides this the colony had filled two extracting supers and 112 sections.—Photographed by J. B. Colson, Uffington, Ont., Can.

STRAY STRAWS

Dr. C. C. Miller

BIRDS came in a bunch March 21—robins, bluebirds, and meadow-larks. March 29, soft maples in bloom; 31st, bees brought out of cellar, thermometer reaching 72 degrees; and within 36 hours the ground was covered with snow.

FOLDING sections with a Hubbard press. Ira D. Bartlett says, *Domestic Beekeeper*, 166, "After practice one can fold a box of 500 in a half-hour. I have folded a box in fifteen minutes, and very seldom take more than twenty minutes."

"ONE BEE inside the veil is worse than a dozen with no veil on," p. 139. T'other way 'round here, Jean White. The minute a bee finds itself trapped in a veil, it gives up all thought of stinging, and turns its whole attention to escaping.

FLOUR, especially rye flour, is used as a substitute for pollen. Flour generally means bolted flour. I wonder if the best part isn't bolted out. Any grain ground and not bolted is good, I think. I have used ground corn and oats, the kind fed to cows, and of course unbolted, with satisfaction.

EUROPEAN foul brood is called a disease of the unsealed larvæ. I don't believe it's as much so as you might think. Take a diseased comb and tear open the sealed cells, and you will find a lot of them containing dead larvæ that showed no indication of the disease until unsealed. But the thing to spot European foul brood by is the *yellowish* unsealed larvæ.

"Extracted honey can be used in a thousand and one ways, while comb honey can be eaten only with a spoon," says Dr. Cheney, p. 293. Surely, doctor, when you have biscuit and honey you don't eat it with a spoon. "In this locality" the with-a-spoon method is just the one way in which comb honey is never eaten. Always with a knife—cut with a knife, and spread with a knife. Are there really different fashions in different places as to the way of eating honey? What's the vogue at Medina?

SURPRISE is expressed by Mrs. Allen, 127, that I should say that outside combs sometimes have less brood than others, while with her it is *always* so. Possibly she has 10-frame hives, while I have 8-frame. Years ago, when I had 10-frame hives, I think the rule was that both outside combs were entirely without brood. Then when I changed to 8-frame hives, one or both outside combs were often broodless, but often with a little brood in one or both. Gradually the amount of brood in the outside combs increased, until now one or both may be as well filled in the height of brood-rearing as the central combs. I don't know why the gradual change, unless it be that the bees are now better. But take it thruout the season, and the rule still is that there is less brood in the outside combs.

THE OLD idea that a laying worker can be lost by being shaken on the ground 40 yards from the hive can hardly be accepted nowadays, even on the word of such a veteran as Major Shallard, p. 61. Please remember that it is now understood that there are a whole lot of "her;" indeed, a large proportion of the colony are found by dissection to contain eggs. Do you suppose they have never taken a cleansing flight, marking their location? Even if you should lose all the layers, are you sure the other old workers would be less hostile to a new queen? And even if you succeed in introducing a queen, are you sure you would not have done it just as well without "losing" your layers?

THAT'S a very fair show-up as to the difference between extracted and comb honey for the beginner, p. 285; and at one point, Huber, you might have made the case even stronger for extracted. You speak of "the inadequate excuse that the production of comb honey requires no honey-extractor," but you don't mention an investment that comb honey does require in the way of *extra* sections and foundation that must be always on hand. It's utterly impossible for you to know in advance exactly how many sections you will need, and you should have ready in advance enough sections for a big season, whether the season proves big or not. And, no matter how closely you plan in the spring, you will always have a lot of unfinished and untouched sections in the fall to be carried over. You don't have to have a very large apiary before the extra capital thus lying idle will buy you an extractor.

MRS. ALLEN declares against dummies, p. 127, among other things saying she doubts if it's a much quicker operation to get out a dummy than a comb. That's the gist of the whole matter, Mrs. Allen. After taking dummies out thousands of times during many years, and after having handled a considerable number of colonies without dummies during the whole of last season, my assistant declares it is economy of time, labor, *and temper*, to have the dummies. Just now it looks as if there might be some readjustment of measurements, if it should be concluded that 1⅜ is too close spacing; and if I were beginning all over again I should want a hive with a dummy, and just as much room for the frames as if no dummy were used. In other words, if a dummy is used then extra room should be allowed for it.

"NO PRODUCER, large or small, of comb honey or of extracted, can afford to disregard the opportunity for selling honey directly from the house," p. 10. That's a rather sweeping statement. Relations to the grocers may be such that no selling at the house is desired. Some would say, "Excuse me from being called away from my work at the busiest time to spend half a dollar's worth of time to sell a quarter's worth of honey." While most may enjoy talking to strangers about bees and honey, some who are good producers dislike it much. Why not allow each one to his own taste? [As a general thing, a beekeeper having honey-signs by the roadside will be remote from any grocery by several miles. Where that is the case there would be no one to object. If any of the members of his family have time to spare, and can deliver the honey and take the change, the man of the house need not waste any time himself. No beekeeper can afford to drop his work in the midst of a harvest, when every minute counts. If a man has a home, by the help of his wife he can make a success.—ED.]

"DR. C. C. MILLER once told us that he was a very much-despised man when the dandelions came into bloom," p. 252. That was not dandelions, Mr. Editor, but sweet clover. The feeling was very bitter against sweet clover; but now the farmers don't object to it, and some even sow it. But I don't think there was ever any very strong feeling against dandelions "in this locality." When I came here 61 years ago the dandelion was a rarity. A neighbor across the way had brought a few seeds from the East and planted them in her dooryard. Now there are acres of the golden carpet. I count the dandelion of immense value, coming as it does so early; and when you say, Mr. Editor, "It yields little or no honey," I feel somewhat aroused. Years ago I had perhaps half a pint of thin, fresh-gathered honey that I *shook* out of the combs, holding them flat over a pan and shaking them. I thought it was dandelion honey. I think so still; but I'm willing to be shown. Show me. [While it is true that you may have had a little dandelion honey, is it not probable that the honey of which you speak came from early fruit-bloom, such as thorn-apple, wild cherry, tame cherry, peach-trees, and the like?—ED.]

WHEN the bees were set on their summer stands, each one had its dead bees (if it had any) cleaned out, and into its entrance was shoved a solid sealed frame of honey, and then the entrance was closed with a thin board having at one end a hole ¾ to 1 inch square. That was a good deal easier for the beekeeper, and very greatly better for the bees than to tear open the hive to see whether any feeding was needed. If any colony was about out of stores, that would make it pretty safe until it could gather; if it had already enough stores to carry it thru, that extra comb would encourage breeding, and would allow storing in supers just so much sooner. In other words, it was swapping a comb of fall honey for an equal amount of white honey in the super. [Is there not danger, doctor, that when you put a comb of honey into the big entrance under the brood-nest you will invite robbers? No, *you* would not do it, because you would be careful to contract the entrance; but a beginner might not.—ED.]

THIS YEAR I'm going to work chiefly for extracted honey. No, it's not because of the upward tendency of the price of extracted. It would not surprise me if comb should advance just as much. One reason for working for extracted is because I'd like to learn how it is done by the man with a small apiary. Another, and a strong reason, is because I want to do my bit to encourage the use of wholesome honey instead of the objectionable glucoses and their like. Comb honey is not likely to become an article of every-day diet for the masses. Extracted may; and if it should it will be greatly for the health and vigor of the nation. So it's me for extracted. [The beekeeping world will be glad to know that you are, in your 86th year, going into the production of *extracted* honey for the next year. You have always been a comb-honey producer, and now it is refreshing to know that we can get the value of your experience in the production of the liquid article. When European foul brood visited your apiary, it seemed like a calamity to you and everybody else. While it cost you something, your experience was worth many thousands of dollars to beekeepers, because you fear it no more. Now can you discover something new under the sun in the production of extracted honey? If you do you will be going some.—ED.]

SIFTINGS

J. E. Crane

I AGREE with R. F. Holtermann that a shallow extracting-frame is a first-class nuisance—see page 251, April. I know it is claimed bees will begin storing sooner in a shallow super; but if the beekeeper will raise a comb or two of brood into the super when put on, there will be no trouble about bees storing honey in it if there is honey to be had.

* * *

I thought I had outgrown nursery rhymes; but one as clever as found on page 279 stirs up my old interest in those quaint old rhymes that go back so far into the past.

* * *

I congratulate Mrs. S. Wilbur Frey, for she tells us on page 254 that she has never failed to get a good crop of honey, and this after thirty-two years at the business. Not many beekeepers can say as much.

* * *

I believe Stancy Puerden is right, as a rule, in placing honey on the outside rather than on the inside of cornmeal muffins in cooking; but yesterday at my son's table I believe I ate the finest brown bread I ever tasted. Honey instead of molasses was used for sweetening. Try it.

* * *

On page 251 the editor predicts a bright future for beekeepers, and bids us take off our hats and shout. Perhaps it is as well to shout now as at any time; besides, we may feel more like it now than in August after excessive drouth or moisture has cut our crop short, and we are buying eight-cent sugar with which to winter our bees.

* * *

Dr. Miller gives two golden rules for building up weak colonies in the spring that should be worth lots of money to beginners —page 256, April. Here they are: "Always help first those that need the least help, leaving the very weakest to be helped last;" and "Never reduce a strong colony to less than four brood." The whole story in a nutshell.

* * *

It was refreshing to see those dandelions on the cover page of Gleanings for April 1—preceding by a month or more those on lawns and in fields; but why—oh why!—did the artist place the head with maturing seed below the blossoms, when nature places it away above the flowers? As the seed ripens, the stalk lengthens until it is two or three times as long as when in bloom. This is so the wind may gently lift the seeds from the mother plant and carry and plant them in some new field that more may be. Nature is very thoughtful. A pious Hebrew would say God instead of nature, and it does us no harm to think that way.

* * *

Bees appear to have wintered well. In our home yard of 185 colonies wintered on summer stands we have found but three dead colonies. One of these was queenless, and another had clustered on one side of the brood-chamber but could not get the honey on the other side, and starved. Bees were confined to their hives about four and a half months. Another had clustered on new white combs.

* * *

C. D. Cheney prophesies good things of extracted honey—page 293, April; and the best of it is he is doubtless right. I remember very well D. W. Quinby, of New York, writing to the *American Bee Journal* more than forty years ago, begging the beekeepers to refrain from sending much extracted honey to the city, as there was little demand for it. Surely the world keeps moving.

* * *

Says the editor, page 252, "The dandelion's one good excuse for existence is found in its great service to the honeybee in producing abundant pollen. It produces little or no honey." This may be true at Medina; but Medina is not the whole world by a long chalk. If the editor could come to Vermont and see hive after hive crammed with dandelion honey the last of May I believe he would be as much surprised as C. P. Dadant was last August to find dandelion honey on the table for breakfast. During the last few years I believe the dandelion has given us more honey than any other plant aside from the clovers. Blessings on "Root's Roses!"

But when we find the bees moving it up into the supers to make room for the queen I sometimes think it possible to have too much of a good thing. The honey is a rather dark amber, and not very bad-flavored when well ripened. It granulates, however, soon after being gathered, when extracted, and makes mischief when stored in sections.

Beekeeping as a Side Line

Grace Allen

THE wonder days of spring are here again, and the heart of every man and woman not utterly crusted over with the life of cities thrills as tho in answer to a call. The farmer starts his big work, shoulder to shoulder with nature herself. And even the man of the shop or the office, who has his own bit of earth and loves it, goes hunting out his fork or spade from behind the shed door and starts his garden. Women tend flocks of fluffy baby chicks, and trim up their rose-bushes and plant their poppies and sweet peas. Beauty has come back to earth like a queen, bringing her gifts of leaf and blossom and growing things.

This, then, is a good time to put a beautifying touch or two on our beeyards. We who keep bees partly for the delight of it have an opportunity to make a wonderfully attractive spot of the corner of the yard where the hives are. Low trees and flowering shrubs are particularly desirable; but it is better to set most of these out in the fall, or very early in the spring while they are still dormant. But castor beans and sunflowers and hollyhocks can be started at this time and will quickly add great beauty to the apiary. Well-trimmed grass is beautiful of itself; quick-growing vines can be trained over the fences, and beds can be made of cheery annuals—nasturtiums, petunias, poppies—provided, of course, that there are no chickens to interfere.

SUGGESTIONS FOR THE NEW SIDELINERS.

Unless you have reason to think some colonies are short of stores, better not open the hives before fruit-bloom. Then the bees will be busy; there will be little likelihood of robbing, the weather will probably be warm, and you can make your spring inspection with pleasure, and with that deliberateness that the amateur loves. That is the time, too, to hunt queens for clipping.

Don't wait till the bees swarm to get your new hives. Plan ahead and have things ready.

A FEW SUCCESSFUL ONES.

Everybody loves pictures, and GLEANINGS is so generous about giving them to us that I hope we may show thruout the summer some choice pictures of attractive apiaries.

We all love stories too. Isn't it good to be children all our lives, forever under the spell of story and picture? To bee-lovers, therefore, there is both pleasure and profit in the tales of the experiences and final success of other keepers of bees. So these, too, we are glad to offer from time to time. Here, for instance, is one that shows the splendid possibilities in taking up beekeeping as a side line. Sometimes one is compelled, because of advancing years or declining health, or some unexpected turn of affairs, to give up his main line of work, and then what a comfort to have a well-established side line to help fill the hours and the interest and the pocketbook! Take the case of Mr. H. C. Cook, of Omaha, Nebraska.

Seventeen years ago, while Mr. Cook was a police patrolman in Omaha, he captured one of those stray swarms that give some of our beekeepers such picturesque starts in their careers. He followed this good fortune with equally good judgment by promptly purchasing the A B C of Bee Culture, and thru its study and the application of the ideas thus gained he has been able to make the bees pay their own way, while he realized his great ambition of ten colonies, then twenty, and then fifty. Fifty is a good comfortable number, and is practically his limit now, as he usually sells off any increase beyond that, making from $75 to $125 a year from these sales alone. While beekeeping was still only a side line, the yearly profits gradually increased, ranging as high as $500 a year. Mr. Cook has now retired from the police force, and, giving his attention especially to the bees, has averaged $1000 profits each year for the past five years. Now, hasn't that side line worked out ideally? And isn't his little yard interesting and attractive?

Mr. H. B. Allen, of Cozad, Nebraska, declares that bees are no small thing, even on a farm like his, that raises pure-bred Holsteins and lambs by the carload. Last season, from 45 colonies he got 1500 pounds of fine comb honey and 4000 pounds of extracted. He has now 57 colonies, having increased from four colonies in four years by the Alexander method and the assistance of GLEANINGS and A B C.

It was with the idea of letting the bees help educate his six children that Mr. D. F. Rankin, of Brownstown, Indiana, started with bees six years ago. Last season, from 23 colonies the family had all the honey they wanted, gave generously to the neighbors, and sold $285 worth. Then they packed 27 colonies snugly away for winter, and sent the oldest boy off to college.

IN CALIFORNIA

P. C. Chadwick

THE condition of bees seems to be satisfactory at this date, March 5.*

* * *

Overstocking is becoming an increasingly serious problem in this part of the state.

* * *

More and more we learn of the value of the bee as a pollen-distributing agent, and more and more its value is becoming known.

* * *

Is there a large overproduction of comb honey, or is the use of extracted honey becoming greater, to the detriment of the demand for comb?

* * *

It is not the amount of larvæ or undeveloped brood that counts when the honey season is on, but the amount of young bees ready for business.

* * *

It is said that the honey of Inyo County alfalfa district is so thick that it is not practical to produce extracted honey, it being impossible to extract it in a satisfactory manner.

* * *

Certain buyers are now trying to contract for the ungathered crop of honey. Producers should not be too anxious to sign up for future delivery, especially at a figure that will cause regrets later on.

* * *

Moving pictures were used for the first time in our state convention in February of this year. Prof. Coleman, of the State University, introduced the innovation and expects to enlarge on their use at our next convention.

* * *

Direct information to the beekeeper as to the price of honey would be of vast importance at selling time. Weekly quotations would tend to inform all beekeepers on the market and save many of them substantial amounts of cash.

* * *

I am pleased to state that the state association lived up to the gentlemen's agreement to let the officers of the association be elected from the North for the ensuing term. A better feeling will prevail all around, and the confidence of the North will be secured for the future.

There is reason to believe that we are facing a heavy swarming season. If the bees continue to develop as far in advance of the honey-flow as now seems probable, heavy swarming is almost sure to be the result.

* * *

Brood-combs containing much small larvæ should not be handled in a temperature much below 70 degrees. Sealed brood will stand a much cooler air, especially that which is nearly matured. Bees will continue to hatch when matured under a surprisingly low temperature.

* * *

The County Farm Adviser movement is being adopted in many counties, and bids fair to be far-reaching in its benefits to rural pursuits. Every branch of rural industry is covered, including beekeeping, poultry, etc. The State will send a man to special gatherings to lecture on the subject called for, and all problems are considered even to marketing. Germany has had a system something on that line for some years. We are just waking up to the need of it.

* * *

The election of Mr. M. C. Richter, of Modesto, as secretary of the state association, is an advanced step that cannot be commended too highly. Mr. Richter is a scholar of fine temperament, studious, and of a scientific turn of mind. Success of the office is assured for the next year. Of Mr. B. B. Hogaboom, our new president, I cannot speak from acquaintance; but from reputation he is a man well capable of caring for the office—a practical beekeeper, a gentleman, and a man conscientious to a fault.

* * *

It seems that I have placed my good friend M. H. Mendleson in an unfavorable light with Mr. Crane, judging from his third paragraph, page 196, March. Perhaps I did not make myself clear on what I wished to say. Mr. Crane has taken the wrong view of my note, for I did not wish to say that the method given would prevent the development of wax-moth on the comb, but rather that no comb honey was allowed to be handled after the time the moth begins to fly, the honey being placed is safety against any chance of a moth-miller reaching it during the night. This eliminates the danger of its coming in contact with the egg-laying miller.

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* These items were written for the April number, but were received too late for insertion in that issue. —ED.

OUR FOOD PAGE

Stancy Puerden

"IN the spring a young man's fancy lightly turns to thoughts of love." That is undoubtedly true of young men; but in the spring this woman's fancy strongly turns to thoughts of gardening. Give me credit, Mr. Editor, for writing two pages right at the beginning of the garden season without mentioning so much as a seed. It was a triumph of will power over inclination. "Breathes there a woman with soul so dead, who to herself hath never said, 'this is my own, my plant I raised?'" It makes little difference what kind of plant. It may be a rare flower, it may be a tomato-plant; but if you planted the tiny seed, saw it come to life, and cared for it thru its different stages to maturity, the joy is there. You worked in partnership with the Creator.

But even if the love of gardening was not born in you, don't fail to raise something this year. Every bit of unused soil should be set at work helping to feed the world and reduce your own food-bills. If you simply cannot make a garden yourself, let some garden-loving neighbor use your land on shares. You don't know what a feeling of satisfaction it gives one, when parsnips and vegetable oysters are retailing at eight cents a pound, to know that you have two long rows of them in the thawing garden. But that is nothing to the bliss you feel when you go to your back yard in May and pull up delicious, pearl-like green onions, crisp radishes, and cut young, tender asparagus. True, they may have been at the grocery four or five weeks earlier; but the flavor of the wilted, imported things was not the same at all, and the price sent grocery bills up in jumps.

Then in June there are green peas. Last year there was an article in an otherwise good magazine by a famous New York chef. He undertook to tell how to cook green peas. His instructions were to boil them rapidly in a large quantity of water, and, when done, to pour off the water. That is what I would call a culinary crime. His further directions were to sweeten them and serve them with some kind of sauce. His idea in treating them in that way was to preserve the green color. The poor ignorant city man probably never ate green peas fresh from the garden, cooked before they had a chance to lose a particle of nature's delicious aroma and sweetness.

The following is my recipe for cooking peas: First, pick them yourself in your own garden. Shell them immediately and put them on to cook in a very little boiling water—just enough to keep them from scorching. Simmer them gently until tender. This is very important, for, if allowed to boil rapidly, much of the flavor is driven off into the air and wasted. When they are done, twenty to forty minutes, depending upon the age of the peas, dress them with a little cream, milk, and butter, or butter alone, if preferred; season, reheat, and serve immediately. You will have a dish fit for a king. To sweeten them would be carrying coals to Newcastle.

If you prefer to gather the peas in the cool of the evening, don't, please don't, put them on the cellar floor until morning. Shell them and parboil them immediately. Then when you reheat them for dinner the next day they will be almost, if not quite, as good as when eaten the same day.

If you are one of those unfortunates who live in a city and have to buy your peas at a grocery or market, sweeten them with honey. It is nature's own sweet, and more like that of the fresh vegetable.

Never waste the water in which delicate-flavored vegetables have been cooked. If you do not wish to use it with the vegetables, start them with very little water and cook until it is all absorbed; or, if you must pour it off, save it for enriching soup. Do not be guilty of feeding valuable mineral salts to the kitchen drain-pipe. The drain-pipe will not be benefited, and you will be robbing your family of necessary food elements.

For the past few years writers on health have been laying great stress on the importance of plenty of mineral salts in our diet, and also the necessity of sufficient bulk, roughage, or cellulose. Fine white flour, polished rice, commercial corn meal, and many of the breakfast foods have been deprived of valuable mineral substances as well as the desired cellulose in the process of manufacture. We are told repeatedly that our bones, teeth, and nerves are being starved by the modern too concentrated foods, and that life itself is often shortened for the same reason. Vegetables, if properly cooked, are rich in soluble minerals, and also have plenty of bulk. A certain sanitarium, justly celebrated for its success in treating disease by attention to diet, prescribes for some of its patients wafers made of a kind of seaweed with an unpronounceable name, found off the coast of China. They are about as palatable as wafers made of excelsior and sawdust. One time at a dinner I heard a lady offer a dollar to any man who would eat a whole wafer. Half a dozen entered the contest, but all failed, altho the wafers were not large and the men were all good sports. Why pay an extravagant price for such things when you can get the same results with delicious fresh vegetables, and the vegetables have food value besides.

To sum up the reasons for making a garden: First, economy at a time when the whole world has the greatest need of economy; second, it will furnish valuable mineral salts, and, in the case of some vegetables, protein and carbohydrates; third, it supplies in a most palatable way the need of bulk; and, fourth, it affords a delicious variation to your diet, and greatly simplifies menu planning. In addition to these excellent reasons, garden work is just as good out-of-door exercise as tennis or golf, and, to a true garden lover, more interesting.

Do you know a perfect garden should have its own musicians? Birds are generous in this way, and should be encouraged in every way possible. But there is another kind of music indispensable in a garden, and that is the happy humming of bees. What is more delightful than a warm June morning, when the roses are at their best? All the garden is full of promise, and the happy hum of the bees typifies joy in life and congenial work. And if your garden musicians produce more honey than you need, you are fortunate indeed, for the demand for honey this year is going to exceed anything ever known before. But keep plenty of honey for your own table. The April *Good Health* says, "A pound of cane sugar when taken into the body is converted into a pound of honey. But it takes four times as long to digest, absorb, and utilize an ounce of cane sugar as it does an ounce of malt sugar or an ounce of starch." In another place in this same article is this: "Cane sugar was never intended to go into human stomachs. Cane sugar is cattle food, not human food. It is found in the things that herbivorous creatures eat." If we believed implicitly everything written about foods in relation to health our diet would be restricted indeed. "What is one man's meat may be another's poison;" but, judging from my experience with the Puerden children, honey is the most wholesome sweet for children. If our children have ever been hurt by eating honey we have not known it. Not being particularly fond of honey myself, I used to think the reason it never hurt the children was because it was cloying, and a very little satisfied. I have quite abandoned that theory. The amount of honey our two boys and their sister eat is appalling. It is always on our breakfast table in some form, and very often it appears at noon and at night too. At one time a doctor friend had stayed over night with us, and at the breakfast-table he remarked, after watching one of our boys help himself liberally to honey the third time, "I know a boy who is due to have a stomachache before night." Well, the boy had no pain then nor at any other time after eating honey. But let the children eat excessively of rich cakes, candy, or maple syrup, and headaches, indigestion or bilious attacks are quite likely to follow. A neighbor of ours, who is the mother of two healthy boys, confirms these statements.

Even more positive testimony as to the value of honey as food is contained in a letter from Mrs. Ona Foliart, formerly of Missouri, now living in Oklahoma, to the *Farm and Fireside*, copied by *Good Health*. She said that for three years her family of five, with an average of three hired men, found no difficulty in making use of from 800 to 1000 pounds of honey on the table each year, altho at that time she had no honey recipes. She said they used very little meat, and in the main honey took the place of meat, jellies, and preserves. She believes her family was healthier in the three years honey was used so abundantly than in the three previous years when they used meat liberally. Like Mrs. Foliart I believe in letting my garden musicians do a large part of my preserving. It saves a housekeeper many weary hours in a hot kitchen, and one never has to worry about the method of sealing. It cannot be improved upon.

Below I am giving menus for one day. Notice the meals will be inexpensive if you can gather the vegetables and pieplant from your own garden.

BREAKFAST.

Oranges; omelet with bacon curls; toast; honey; coffee, or honey cereal coffee.

DINNER.

Hot beef loaf surrounded by riced potato; brown gravy; stewed asparagus; radishes, green onions; one crust pieplant pie.

SUPPER OR LUNCH.

Baked rice with cheese; lettuce salad; honey gingerbread (Airline Honey-book); canned fruit.

BAKED RICE WITH CHEESE.

One cup rice boiled and drained; cup cheese cut small; cup white sauce; cup canned tomatoes; teaspoon honey; salt and pepper; buttered bread-crumbs.

Put the rice and cheese in oiled baking-dish; turn in the cold tomatoes sweetened slightly with the honey, and then the white sauce and mix. Season to taste. Cover with the buttered bread-crumbs and bake thirty or forty minutes.

BEGINNERS' LESSONS

H. H. Root

LESSON NO. 4.—HOW TO START WITH BEES

HAVING purchased a suitable outfit, preferably for the production of extracted honey as outlined in Lesson No. 3, the next problem that confronts the beginner is how and where to get the bees. There are six different plans that may be mentioned: (1.) Buying a colony in an old box hive. (2.) Obtaining a colony from a bee-tree. (3.) Buying bees by the pound. (4.) Buying a nucleus of a colony on combs. (5.) Buying a full colony on combs. (6.) Buying a swarm. While there are circumstances when any of these plans are satisfactory, not all of them are to be recommended for a beginner.

(1.) If a beginner buys a colony in an old-fashioned box hive he is buying a pig in a poke. He doesn't know what he is getting, and, for that matter, neither does any one else. The combs are likely to be crooked, with frequently too large a percentage of drone-cells. Nothing can be told about the queen, for she cannot be found until the colony is transferred into another hive. The transferring itself is a comparatively simple matter for one who has had some experience, but a beginner ought to avoid tackling a job like this.

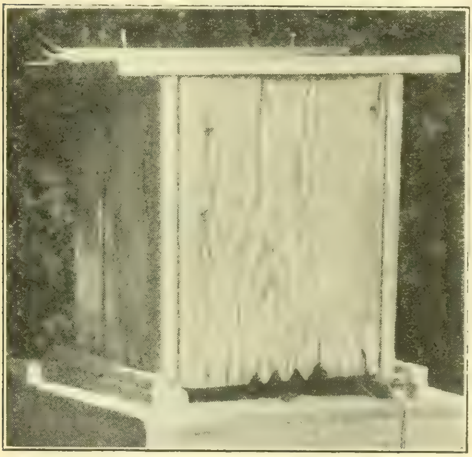


Fig. 1.—The outside of a box hive gives very little indication of what is going on inside. The colony is like a pig in a poke.

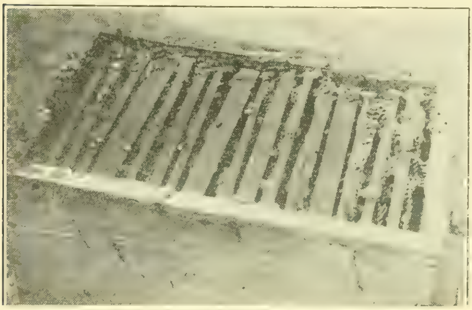


Fig. 2.—The combs are likely to be crooked, built together, and attached only to bars or sticks—therefore immovable.

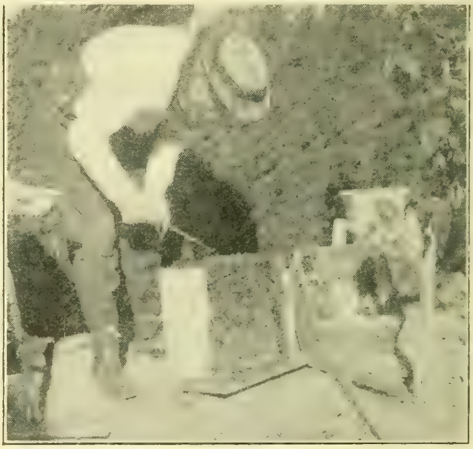


Fig. 3.—Transferring bees from a box hive, especially if you try to use the old combs, is some job—too complicated for the average beginner.

(2.) Cutting a bee-tree and transferring the colony therefrom is also considerable of an undertaking—a lot of fun if there is an old hand along to tell how, but not much fun if tackled alone by a beginner.

(3.) Buying bees in a combless package

Fig. 4.—Cutting down a bee-tree and transferring the colony to a hive is fun—provided you have some one along to boss the job.

is all right; but the mistake should not be made of buying too small a package. An experienced man can take half a pound of bees and build them up to a full-sized colony, the first season; but a beginner should take nothing less than a full pound. If drawn combs can be begged, bought, or borrowed, bees shipped in a combless package should be hived on such combs, and not on foundation alone. A queen should always come with the bees. A pound of bees needs about three combs, more being added as they are needed. Two pounds of bees should be hived on not less than four combs to start with.

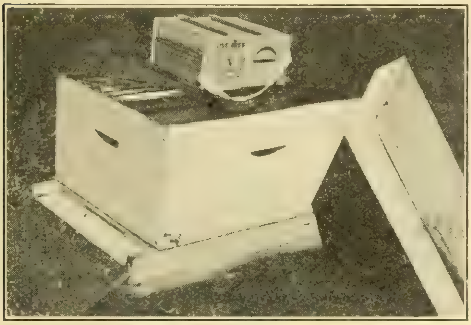


Fig. 5.—Buying bees by the pound is a good way to start, provided you don't get too small a package. Cut the wire cloth from one side of the cage and lay it flat on the frames. Put on an empty super, then the cover, and let the bees work their way down into the hive.

(4.) Buying a nucleus—that is, a part of a colony on combs—is a little less risky for a beginner, altho such a nucleus costs more, to be sure. In buying bees on combs it is not safe to take any man's word for the condition of the bees unless the man is known to be reliable. In fact, on account of the danger of getting disease, buying bees on combs should be avoided unless the breeder has a good reputation for honesty and square dealing.

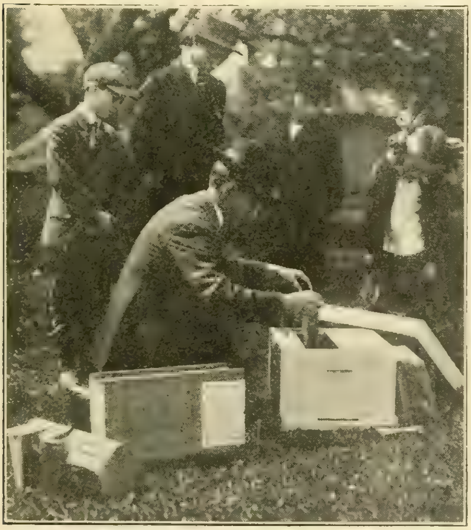


Fig. 6.—Buying a three-frame nucleus is a safe way to start, altho rather expensive.

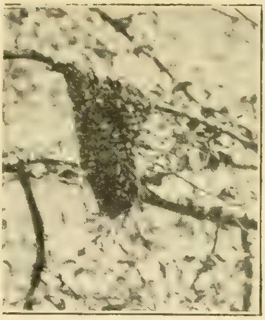


Fig. 7.—If you buy a swarm from some near-by beekeeper, don't get a little dinky one like this, with only about a pint and a half of bees.

(5.) If expense is not an item to be considered, the *easiest* plan of all is to buy a full colony from a reputable beekeeper.

(6.) In the majority of instances, perhaps the most satisfactory method of getting a start is to buy a swarm—a good-sized one—from some local beekeeper. Arrangements should be made for the purchase of it in advance, the beekeeper to give notice when it issues. The beekeeper should hive it in a box, then the beginner can take it home and dump the bees before the entrance of the new hive filled with frames containing full sheets of foundation. No bees work with such energy as do those of a prime swarm; therefore the method of buying a swarm is, perhaps, the most economical and most satisfactory way of all.

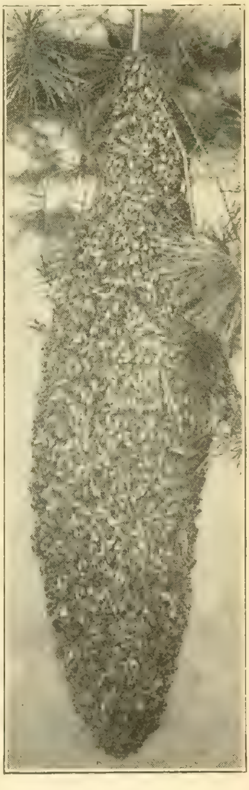


Fig. 8.—Buying a good-sized swarm from a near-by beekeeper is the best way of all to make a start. One is enough to begin with.

AROUND THE OFFICE

M.-A.-O.

SOMETIMES and often oftener the beekeepers' supply house gets all that is coming to it and more, as is proved by the postscript to the following letter received by a supply-manufacturing concern located less than a thousand miles from where the Man-Around-the-Office sits as he writes this. Read it, if you can nerve yourself against its very emphatic language. Here it is (except that the man's real name is not given):

> "Deer Surs:—The huny extrackter what i ordered sum time back came today and what the devul do you send me a masheen without a crank. how in hellcana man extrakt huny when there aint no crank to turn the whurligig bizness inside that holds them ther komes that the huny runs out of when it whurls fast. now maybe you think i am a damfoole but my wife she to sed ther want no crank and the two on us hadent aurter make thesame mistake. now if you fellers dont no no more un send out a masheen without a crank, you surtanly aurter be given hellunthadevul. when i spens my good muny for a masheen an then cant use it when i get it i have got to take it out on sumwun. now what i want to say is to send that crank damkwick. what is the good of a masheen with no crank is what i ud like to no. nextime you can keep yur damol masheen. "hoping you are the same, i am
>
> "EMMET BUMPUS
>
> "p. s.—dont send the crank. i found it in the bottom of the box."

* * *

This is true, too. It just goes to prove that men can "fib" when they speak the truth and tell the truth when they "fib." It was at the Pan-American Exposition at Buffalo, fifteen years ago. O. L. Hershiser, as superintendent of the New York State honey exhibit had eight or ten colonies of bees (his own) in glass enclosures around the large outside windows of the second story of the Agricultural Hall. On the first floor, just inside the entrance door and below where the bees were domiciled, some enterprising American citizen was conducting a sweet-cider concession. With a handpress he produced sweet cider and pomace "while you wait"—and did a thriving business at so much per. There came a honey dearth, and Hershiser's bees all hands took to cider-drinking and pomace-chewing one flight down. They stung a few human competitors there, and scared a good many more. Ruin and wrath gripped the concession man. I guess they did—he was so mad he nearly had apoplexy. Got the superintendent of the building. Got his assistants. Got hard language carefully thought up. Then they all together went upstairs to the bee region. He would get those ding-blasted bees out of there by the great horn spoons, or know why. He talked just that way to the innocent, rufus - whiskered, mild-mannered beeman that Mr. Hershiser had in charge—said the bees were stinging the life out of his customers, and already had stung the cider business to a fare-ye-well and—oh! he talked awful. "Those bees sting, that are troubling you, do they?" mildly asked the rufus-be-whiskered bee-guardian. "Sting? I guess they sting," said Mr. Concession Man. "They would shoot rifles at us if they had them." "Ah!" said the mild man, "then they can't be *these* bees, for *these* bees don't sting," and he reached into a well-filled drone-trap over the entrance to one of the colonies, took out a handful of the he bees, rolled several on his face, crushed them in his hand, got the concession man to do likewise—in short, convinced the visiting war committee that "*these* are stingless bees," and the erstwhile wrathy concession man and his crowd went away perfectly satisfied, to hunt their heads off for the sure-enough stingers that must come from somewhere else. As they went downstairs filled with wonder and stingless notions, the innocent beeman slapped his leg, undid his features, and said to Ernest: "*These* bees *are stingless.*" Sure enough, *those* bees were stingless. He had "fibbed" and he hadn't, hadn't he?

* * *

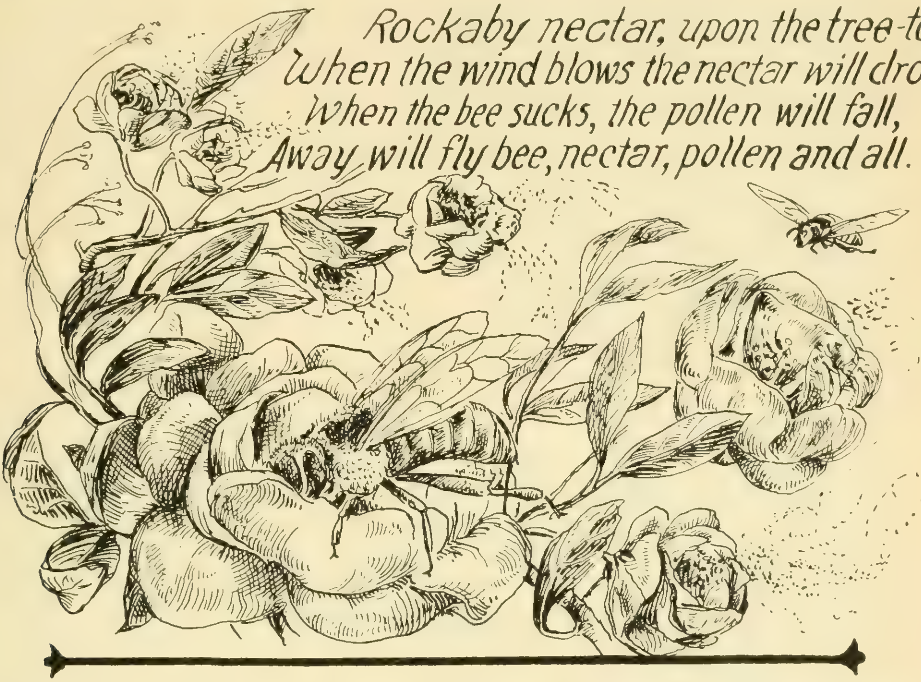
Men can get so far apart from each other on the temperance question that they can't comprehend each other's language, as the following incident occurring in our office shows. Manager J. T. Calvert is as "dry" as Mr. A. I. Root. He won't stand for "booze" anywhere nor at any time. He's just straight poison on it. Well, another man, temporarily doing some special accounting work in the office, chanced not to be so poisonous on liquor as John is. In fact, he was accustomed to take a good many personal chances on this form of poison. The very first day he was in the office John got a whiff of his exuberant breath—right in our office, mind you—and, in a surprised undertone and close to his ear, said: "Do you drink?" With a grateful look of pleasurable anticipation the special figure expert spoke right up, saying: "I don't mind. What have you got?"

Hully gee! John got his breath back finally, and eventually recovered. The other man has long since gone hence.

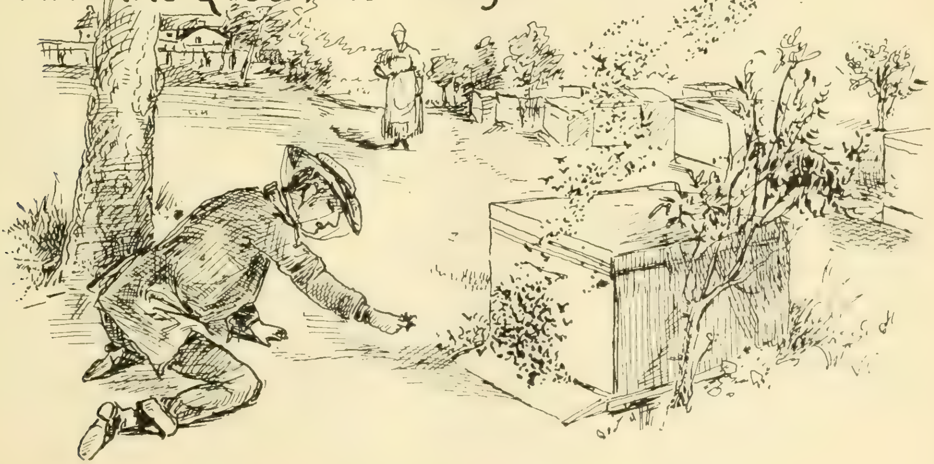
Mother Bee NURSERY RHYMES

By M.G.P. (Mother Goose Plagiarized.)

Rockaby nectar, upon the tree-top,
When the wind blows the nectar will drop;
When the bee sucks, the pollen will fall,
Away will fly bee, nectar, pollen and all.



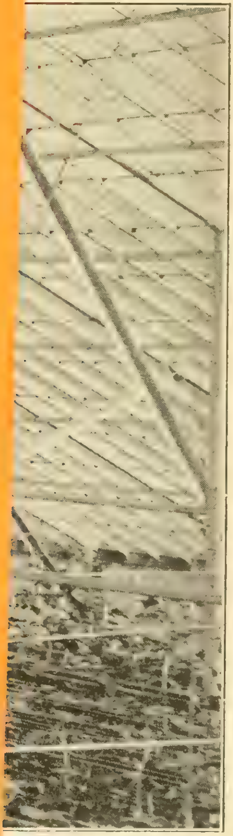
Hey, diddie dunny, the comb and the honey
The Bees swarmed out of the hive;
The Beekeeper groaned, to see such sport,
And the Queen he caught alive.



Foldout

Here

vo of the rows of cucum-
nine feet high.



irty feet wide

JUST NEWS

Editors

THE Kansas legislature has recently appropriated $5000 for inspection of apiaries in that state. This aid to Kansas beekeepers is badly needed. Thus the beekeepers' cause goes marching on in the Sunflower State as well as almost everywhere else.

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Mr. E. L. Sechrist, of Fair Oaks, Cal., is now employed as an assistant to Dr. E. F. Phillips at Drummond, Md., in the U. S. Bureau of Entomology.

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The Northwest Missouri Beekeepers' Association has been organized at St. Joseph, Mo., with A. V. Small as president, and L. E. Altwein, secretary-treasurer. Prof. Haseman, of the University of Missouri, who is secretary of the Missouri State Beekeepers' Association, was present at the organizing meeting and delivered an address.

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The department of Agriculture of British Columbia estimates that province's honey crop of 1916 at 240,000 lbs. This was a decided increase over the crop of 1915 despite a very unfavorable season. Thru the efforts of Mr. William Hughs, Victoria, there was organized early in the year the Beekeepers' Association of British Columbia, and already one-tenth of all the beekeepers in the Province are on its roll of membership. It has made an excellent beginning, and is doing much to standardize hives, packages, and methods.

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Hamlin B. Miller, secretary-treasurer of the Iowa State Beekeepers' Association, is the real thing in the line of enthusiasm and hustle. He approximates walking dynamite. "Bee Pep," Vol. I., No. 2, dated at Marshalltown, Ia., March, 1917, contains a concise report of the proceedings of the fifth annual convention of Iowa beekeepers, together with much pithy comment on the beekeeping business in general and the Iowa State Beekeepers' Association in particular. Mr. Miller has made this association pretty nearly (if not quite) the livest beekeepers' organization under the sun.

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Good news from Iowa. The legislature of that state recently passed a bill providing for bee inspection, regular instruction, and both short-course work and extension work at Iowa State College. This bill was passed despite the fact that another bill was introduced into the Iowa legislature to repeal all laws pertaining to bee culture. Mr. F. C. Pellett is entitled to much credit for helping secure this new bee legislation in Iowa.

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Mr. B. F. Kindig, formerly one of the state inspectors of apiaries of Indiana, has been appointed as state inspector of apiaries for Michigan, taking the place of F. E. Millen, who resigned to accept a position in Iowa State College, at Ames, Iowa, in the Department of Entomology. Mr. Kindig is making good in the state of his adoption. He has prepared a number of valuable press bulletins on bees, and the control of bee diseases in particular, which he has sent out to between 650 and 700 papers published in Michigan. The beekeepers of Michigan will be interested in special bulletins 58, 64, and 76, dealing with treatment of European foul brood, and which may be secured free from the Michigan Agricultural Experiment Station, or by addressing State Inspector Kindig at East Lansing, Mich.

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On page 283, in our "Just News" department for April, appeared an item to the effect that bees in hives or in nuclei containing combs, if shipped into Ontario, Canada, would be quarantined at the port of entry for a period of not more than nine months. . . Bees in pound packages without combs were to be exempt from this detention provided they were accompanied by a satisfactory certificate from a state or provincial inspector declaring them to be free from disease. We have been advised by the authorities that this is a mistake; that bees can be shipped into Canada on or off combs with or without an inspector's certificate. Gleanings received a request that such notice be inserted. We will endeavor to locate the original source of information and see what was back of it all. In the mean time our apologies are due to the pound-package men as well as to the beekeepers of Canada.

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A letter from Louis B. Hochstein, of Paradero de Mangas, Province Pinar del Rio, Cuba, informs us of the death of his father, C. F. Hochstein, who was one of the most successful producers of extracted honey in the island republic. He died

March 9, aged 64 years. He was a man of exceptionally lovable character as well as a most resourceful beekeeper. In 1898, Mr. A. I. Root visited him in his Cuban home, when a fast friendship between the two was formed, and later Mr. Hochstein contributed a number of articles to GLEANINGS.

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ANOTHER REPORT ON WINTER LOSSES, PRESENT CONDITION OF BEES, AND HONEY PROSPECTS.

Below are printed answers, from widely different parts of the country, to questions concerning: (1) winter losses in the locality of the correspondent; (2) strength of colonies and stores; (3) likelihood of colonies being ready for the honey-flow; (4) likelihood of the honey-flow being ready when the bees are ready; (5) condition of principal honey-producing plants; (6) rainfall. The answers printed below were written from the 12th to the 16th of April. They show some decided changes in certain sections of the country as compared with reports of a month ago. Conditions are now apparently much brighter in Michigan, New York, and the white-clover section generally than a few weeks ago. The Texas outlook seems to be poor because of unusual drouth; and conditions in California and on the Pacific coast generally appear to be very far from satisfactory. Here are the reports from our correspondents briefly summarized:

CALIFORNIA, reported by P. C. Chadwick, Redlands.—Winter loss hard to estimate but has increased greatly during the last two weeks; strength of colonies good where abundance of stores were available, but elsewhere poor and there has been much loss during the past ten days from shortage of stores; colonies will be ready for the honey-flow when on in cases where sufficient stores were available for breeding but not under other conditions; honey-flow from the orange will be on time and ready for the bees but sage and wild flora will be late; as to condition of principal honey-producing plants, orange good but wild flora fair to poor; there has not been enough rain. There has never been a season for years when so much stores has been consumed between February 1 and April 10. Many colonies with plenty February 1 are now destitute save for what they gather from day to day. A week's bad weather would be fatal to many colonies.

COLORADO, reported by Wesley Foster, Boulder.—Winter loss 10 to 15 per cent; condition of colonies as regards strength and stores, in good shape and probably enough stores; colonies likely to be ready for the honey-flow and the honey-flow will be ready by the time the bees are; principal honey-producing plants are in good condition; alfalfa and sweet clover are all right in Colorado; there has been sufficient rain thus far.

CONNECTICUT, reported by L. Wayne Adams, Hartford.—Winter loss about 30 per cent; colony strength and stores good; not all colonies will be ready for honey-flow and honey-flow will not be ready when the bees are; condition of principal honey-producing plants good; too early yet to tell condition of clover; fair amount of rainfall.

FLORIDA, reported by E. G. Baldwin, Deland.—Winter loss perhaps 10 per cent, a little heavier than usual owing to lack of stores in spring; colonies strong in bees but stores diminishing rapidly; never have known bees to breed more rapidly than this winter and early spring; colonies will be ready all right for honey-flow, but question when the honey-flow will come as the freeze did much damage; scrub palmetto is already begun in southern part of the state and will be in flower in middle of the state within two weeks or thereabouts, and bees are ready for flow now; as to main honey-producing plants, orange was frozen as far south as Tampa and only scattering bloom south of there; scrub palmetto looks fine and blooming earlier than usual; mangrove in the water is not badly hurt, tupelo ought to yield well as the trees are not hurt by the cold; rainfall very deficient over the entire state and badly needed now.

IOWA, reported by W. P. Southworth, Sioux City.—Winter loss of bees 50 per cent hereabout; colonies surviving are in normal condition but short of stores; bees in the hands of specialists that have been wintered in cellars are generally in first-class condition and well supplied with stores; bees likely to be in excellent condition for the opening of the honey-flow; but on account of spring being late prospects are that the honey-yielding plants will be abundant and will bloom by the time the bees are ready; white clover is not showing much at present and too early to estimate condition of that plant; abundant snow during the winter and plenty of spring rain; accordingly clover crop should be good.

ILLINOIS, reported by James A. Stone, Springfield.—Winter loss perhaps 5 per cent; condition of colonies and amount of stores better than average; colonies will be ready for honey-flow, but there is always a shortage between the fruit bloom and the clover; condition of main honey-producing plants a little less than average apparently; clover is looking fairly well; there has been enough rainfall.

INDIANA, reported by John C. Bull, Hammond.—Three to five per cent winter loss; colonies strong and plenty of stores; the colonies will be ready for the honey-flow and the honey-flow will be on time for the bees; condition of clover nothing extra and other plants about normal; none too much rainfall.

IDAHO, reported by F. C. Bowman, Idaho Falls.—Percentage of winter loss yet in doubt but estimated to be 50 per cent; condition of colonies as regards strength of stores fair; colonies will be ready for the honey-flow and the honey-flow will be on time for the bees; too early yet to state the condition of the honey-producing plants; rainfall has been sufficient.

KENTUCKY, reported by Virgil Weaver, Falmouth.—Loss of healthy bees about 15 per cent; strength of colonies normal and stores abundant; colonies will be ready for the honey-flow, but a very late spring will have a tendency to delay the blooming of the clover unless the weather is excessively warm from now on; sweet clover and aster are normal, while white clover is short, but the excessive moisture we are now having is making it do its very best; reports from central Kentucky where there is nothing but white clover for the spring flow indicate good prospect for a big white-clover flow.

MASSACHUSETTS, reported by H. H. Jepson, Boston.—Winter loss about 5 per cent; colonies not very strong; stores rather short; season rather late, but colonies will probably be ready for the honey-flow; clover likely to yield a good honey-flow; had an average rainfall.

MICHIGAN, reported by E. M. Hunt, Lansing.—Winter losses not nearly so heavy as at first supposed, as present indications would seem to be that they will not be over 10 to 20 per cent; bees apparently strong for this season of the year and stores generally in pretty good shape; bees will be ready for honey flow if weather is favorable during soft-maple bloom and fruit bloom a little later; clover apparently in fair condition; rainfall about one-half normal since January 1; weather still remains cool.

MISSISSIPPI, reported by the Penn Co., Penn.—Winter loss about 3 per cent; condition of colonies generally good with plenty of stores; colonies will be in fine shape and ready for honey-flow and the honey-flow will be ready when the bees are ready; condition of main honey-producing plants not the best as some were winter-killed; clover not looking so good, about 50 per cent winter killed; 25 inches of rainfall since January 1.

MISSISSIPPI, reported by the Stover Apiaries, Starkville.—Bees are very backward and making very little headway, also have used up worlds of stores and not gained much; season here is very backward, being about a month behind, continued cold up to this time, April 14.

MINNESOTA, reported by E. L. Hofmann, Janesville.—Loss in cellar wintering about 2 per cent; colonies are strong with a good supply of stores, and with proper management should be in good condition for the harvest; basswood is about due to give us some surplus again and clover is in excellent condition, but of late all indications are for dry weather.

NORTH CAROLINA, reported by Walter Flemings, Greensboro.—Winter loss 10 per cent; strength of colonies is fair but many colonies short of stores; the colonies generally will not be ready for the honey-flow altho the experienced man will have his ready; the honey-flow will be even too early for the bees; condition of principal honey-producing plants about 85 per cent except clover, which is not a good stand and backward; there has been too much rainfall.

NEW JERSEY, reported by E. G. Carr, New Egypt.—Percentage of winter loss 5 per cent; stores rather short, strength of colonies medium; doubtful if colonies will be ready for the honey-flow and honey-flow likely to be ready before the bees are; condition of principal honey-producing plants good and clover looks good; enough rainfall.

NEW YORK, reported by F. A. Salisbury, Syracuse.—Winter loss probably not over 15 per cent, strength of colonies and stores good; colonies are going to be ready for the honey-flow and the honey-flow seems sure to be on time for the bees; principal honey-producing plants are in normal condition; rainfall sufficient.

OHIO, reported by E. R. Root, Medina.—Winter loss about 10 per cent; strength of colonies fair, altho the weak suffered severely during the winter and late spring; stores appear to be abundant; colonies likely to be ready for the honey-flow, and the honey-flow probably will be ready when the bees are ready; condition of the main honey-producing plants good; condition of clover fair; there has been sufficient rainfall.

OKLAHOMA, reported by F. W. Vandemark, Stillwater.—Winter losses 5 per cent; condition of colonies as to strength and stores good; colonies will be ready for honey-flow and honey-flow promises to be ready for the bees; condition of principal honey-producing plants good; condition of sweet clover and alfalfa good; fine rain falling now.

OREGON, reported by E. J. Ladd, Portland.—Percentage of winter loss not over 10 per cent; condition of the colonies regarding strength and also stores, light in both; colonies are not likely to be ready for the honey-flow; condition of the principal honey-producing plants was never better; cover looks excellent; have had too much rainfall.

ONTARIO, reported by J. L. Byer, Markham.—Winter loss in this locality very light, probably about 5 per cent, and reports from other parts of Ontario to date indicate a very light mortality to be the general condition of the bees in this province; majority of colonies are strong and nearly all have plenty of stores; warm weather needed, and upon how soon this comes depends whether bees will be ready for clover when it blooms; season abnormally cold to date; bees had first cleansing flight on March 25 and 26, and since that time they have flown on only two days and only for about an hour or so at a time; heavy freezing every night and cold raw winds thruout the day; clover looked fine when the snow left but is being hard tried now; alsike likely to be in fair condition.

PENNSYLVANIA, reported by H. C. Klinger, Liverpool.—Percentage of winter loss is less than 5 per cent; colonies are in good shape as to bees and stores; owing to cold weather the last few weeks brood-rearing has been retarded and also vegetation and so the colonies may be ready for the honey-flow when it comes unless weather conditions force the fruit and clover blossoms ahead; clover has not been making any headway but there appears to be a good stand; rainfall has been sufficient but cold weather has held up everything.

TENNESSEE, reported by Mrs. Grace Allen, Nashville.—In this immediate section winter loss in almost nothing; colonies strong with fair stores; late cold spring has retarded brood-rearing somewhat but hope to be ready for honey-flow; main honey-producing plants in this locality look promising with exception of crimson clover and alsike which were winter-damaged; buds of locust are forming and ought to be out in about two weeks; white clover shows splendid indications but other clovers have been injured by the trying winter; enough rainfall and to spare.

TEXAS, reported by F. D. Paddock, College Station.—Winter loss in all sections of the state comparatively light, but there has been a heavy spring loss, due in some instances to lack of pollen; most of colonies now in good shape are very light on stores; bees will be ready for any honey-flow that comes, but the honey-flow will be short on most of the staple honey-plants on account of an excessively dry winter; have just had a rain over the entire state and this will help considerably, but it is impossible to tell at this time just what extent this rain will affect the principal honey-plants.

UTAH, reported by M. L. Skougard, Parowan.—Winter loss 30 per cent; bees that have wintered are gaining fast and will be ready for main honey-flow; much work to keep colonies supplied with enough stores to last until fruit-bloom, as they have consumed more stores this winter than for many seasons past; clover is starting nicely, and the fruit-bloom promises well as a honey-producing source; not as much snow in the mountains as at first thought, but enough to keep our streams up this summer.

VERMONT, reported by J. E. Crane, Middlebury.—Winter loss 2 per cent; strength of colonies and stores good; looks as if colonies would be ready for honey-flow and honey-flow will be on time; condition of main honey-producing plants good; clover looks well; plenty of rainfall; outlook for a good crop of honey so far as bees and clover are concerned excellent, but have noticed that when everything is satisfactory or at the best in early spring we are more likely to meet with failure than when it looks less promising.

WASHINGTON, reported by G. W. Bowlin, White Swan.—Bees have wintered finely, few reporting as large as 10 per cent loss, while many have lost but one to three per cent.

WISCONSIN, reported by N. E. France, Platteville.—Winter loss 2 to 5 per cent; condition of colonies as to strength and their stores best for years; uncertain as to colonies being ready for the honey-flow, as cold nights retard brood-rearing; main honey plants in good condition; clover in this locality looks good; rain is now needed.

[Received too late for alphabetical arrangement.]

COLORADO, reported by J. A. Green, of Grand Junction.—Winter loss probably 15 per cent; colonies a little below the normal in strength; plenty of stores; the colonies will be ready for the honey-flow, and the honey-flow will be ready for the bees; principal honey-producing plants in good condition; there has been enough rainfall.

GEORGIA, reported by L. W. Crovatt, Savannah.—Winter loss, 3 per cent; colonies in fine strength and general condition; small supply of stores at beginning of early honey-flow; severe freeze set back the early honey-producing plants, but flow from titi has been fairly satisfactory, and beekeepers are hopeful concerning the flow from gallberry, which begins early in May; condition of main honey-plants regarded very favorable; there has been abundant rainfall.

BRITISH COLUMBIA, reported by Williams Hugh, Victoria.—Thruout the wide area of British Columbia, with all its diverse climatic conditions, the coming of spring has been delayed from five to six weeks, and more rain than usual has fallen over the lower mainland and Vancouver Island, which fact appears responsible for an increase in the loss of colonies; loss probably 25 per cent, due to insufficient and improper stores; colonies that were well packed down for the winter with plenty of stores will be ready for any honey-flow; there are no great areas in this district where it can be said there are "main honey-producing centers," but there is a succession of honey-producing plants always; the small areas devoted to the culture of clover are in good condition; there has been more rainfall than usual.

H. B. Murray, of Liberty, N. C., breeder of Italian queens, writes that he feels safe in saying that the past winter has been the hardest on bees that has been experienced in North Carolina for twenty or thirty years, and that there has been much spring dwindling. He says that after having visited both the eastern and western parts of North Carolina he finds bees in very poor condition as a rule, altho there are some good colonies that had extra care and exceptional strength of young bees last fall, but in general he says it has been a very rough winter on bees in the South.

A. B. Marchant, of Marchant Bros., Union Springs, Ala., writes that the weather conditions and bee conditions have been so extremely bad in the South during February and March and the present month that most bee and queen breeders will be unable to fill early orders, and that the pound-package business has been very hard hit. He says that bees in the South were apparently in good condition February 1, but since then the weather and honey-producing-plant conditions have been almost as bad as possible for them to be. He puts in a strong plea for patience and consideration from the patrons of the southern bee and queen breeders.

W. D. Achord, of Fitzpatrick, Ala., under date of April 18, writes the colonies are not so strong as usual at this time of the year, and that he has been refusing orders for packages for several days, but is trying hard to ship promptly. He says that some shipments may have to be delayed for several days; and as this appears to be his worst fear, the situation in Alabama does not seem to be alarming.

The Rocky Mountain Bee Co., located at Billings, Mont., reports the loss of bees in the eastern part of the State as being about 50 per cent.

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Thru the efforts of the A. I. Root Co.'s traffic manager, with the co-operation of others interested in the shipping of comb honey in the territory in which the southern classification governs, the committee at their last meeting, held in March at New Orleans, acted favorably on our application. As soon as the new rule goes into effect, which will doubtless be in June, altho we are not yet informed of the exact date, comb honey may be shipped in southern-classification territory at a considerably lower rate than in effect heretofore, but with no special rate for carload lots. These rates will be the same as those in effect in western territory. To take full advantage of the lower rates it is necessary to pack the cases of comb honey in carriers with at least four inches of cushioning material underneath. Carriers should not weigh over 258 lbs. each, gross, and should have handles.

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In our January issue, pages 30 and 31, we reviewed the case between the beekeepers and the Coniagas Reduction Co., smelters, that was tried before the Supreme Court of Ontario, Canada. After hearing all the evidence on both sides, his Lordship, Judge C. J. Falconbridge, rendered a decision in favor of the smelter owners. His judgment as rendered is as follows:

> Plaintiffs have to prove to the satisfaction of a judge or jury that the loss which they have suffered was caused by the wrongful acts of defendants, viz., by the emission from their works of noxious vapors or substances which killed the bees. It is not sufficient for me to find that the destruction of the bees might have been—and, indeed, probably was—caused by the works of defendants. The question is, Has that been proved? There seem to be too many elements of doubt for me to resolve them all in plaintiffs' favor. The plaintiffs have failed to prove their case to my reasonable satisfaction, and their action must be dismissed with costs. Fifteen days' stay.

It is apparent that the judge believed that the bees were killed by the noxious gases from the smelters, but because the fact was not proved to his "reasonable satisfaction" he dismissed the action with costs. There were nine other actions against the Coniagas Reduction Co., that were also dismissed at the same time. While we do not presume to question the rightfulness of the judge's decision, it may mean the wiping-out of the beekeeping industry in and about a considerable area around the smelters not a great way removed from St. Catherines. The territory in question comprises some of the best fruit and garden area on the continent. It remains to be seen now whether the elimination of bees will not ruin the fruit interests as well.

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The nineteenth semi-annual session of the Panhandle Beekeepers' Association was held April 11 at Wheeling. Officers elected were as follows: Pres., Will C. Griffith, of Elm Grove; Vice-president, A. W. MacMasters, of Jacobsburg; Secretary, John Rude, of Bellaire. Members of this association are very optimistic as to the outlook for the coming season. Bees wintered well there, due to the excellent crop of clover of last summer. Preliminary plans were made to hold the annual outing of the members and their families the coming summer. Mr. Griffith, president of the association, is a very ardent beeman, and is doing much good to the bee and honey cause in the Panhandle country. If there were more such driving and enthusiastic beemen in every beekeeping community, the bee and honey business would soon be on the high and important plane that it rightfully may claim.

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The United Honey-Producers' Association, by its president and secretary, Messrs. Geo. J. Brown and Geo. W. Williams, have submitted to its Board of Control a proposition that the beekeepers of the United States give their best efforts to procuring 10,000,000 lbs. of honey, or any part thereof, for the use of the military forces of the Government. In submitting this proposition to the U. H. P.'s Board of Control, the officers of the association say:

> In view of the fact that the world-wide war is demanding maximum production of food at the least possible cost and the utmost conservation of energy-producing elements, the beekeepers of the United States desire to add their quota to the general supply of available foods. The recent favorable experience of the European armies in the trenches shows the high value of honey, at a minimum of cost. Our army and navy are made up of the flower of our youth, and they must have the best.

GLEANED BY ASKING

E. R. Root

H. G., Ontario.—Is it true that a queen will not go into an upper story and lay when the frames are crosswise or at right angles to those in the lower story?

A. As Mr. R. F. Holtermann, of Ontario, uses twelve-frame hives that are square, and has tested out this proposition, we referred it to him for answer. His reply is as follows:

"No, it will not be a sure way to keep the queen in the brood-chamber; but it does have a tendency to keep the queen below, because the passageway is broken. I have used such supers, and nevertheless am using queen-excluders, and do not consider them as an ornament but a necessity. Then, too, we must remember that few beekeepers have their surplus combs all worker comb; and no drone comb in the super is safe from the queen unless she has enough in the brood-chamber to supply the ambition of the queen and colony. No, I would not depend upon that way to keep the queen in the body of the hive. Again, ventilation is checked very much in the continuity of the passages between the combs of the colony." R. F. H.

C. W., Oregon.—I lost two stands of bees last winter—not enough bees, and very cold weather at times. The combs are moldy. There is mold on some of the honey. Could the honey be used as food? Would it be safe to feed to bees?

A. You can use the combs on which the bees died, giving them to other bees. The fact that they are molding would not render them unfit for the purpose. The bees doubtless died because of insufficient protection and not because the food was inferior.

C. H. K., Ohio.—I have a lot of combs of honey candied hard. Can you tell me how to extract it without melting the combs?

A. There is no way that you can remove the candied honey from the combs except to soak them in warm water after uncapping and then put them in an extractor. After that you can give them to bees and they may remove the honey and they may not. We would use the combs for strengthening up weak colonies by moistening them in water, and you will find they will be excellent for brood-rearing in the spring. If you use the honey in this way they will extract it; but in order to prevent the granules from dropping down on the bottom-board and being lost, it will be necessary to wet the combs occasionally in warm water.

W. M., Ohio.—1. About what time should brood-rearing be started in Ohio—near Dayton?

2. When is it safe to open the hives for examination in the spring?

3. When does the honey-flow start, and what flora furnishes it?

4. What furnishes the early pollen?

A. 1. Brood-rearing may start in the vicinity of Dayton, Ohio, as early as the first of January, but usually not much before the first of March. At that time there will be some eggs laid and a little brood will mature, but not much sealed brood will be found before the first of April, and then in little patches about as big as one's hand. Something will depend upon the size of the colonies. The larger the colony the earlier the brood will be found and the more of it.

2. A hive may be opened up if it is outdoors at any time when it is warm enough for the bees to fly; but there should not be very much manipulation of a colony of bees before the first or middle of April, and then only to supply it with sufficient stores if they are running short.

3. In your locality the honey-flow would start somewhere about the first of June.

4. Soft maple furnishes about the earliest pollen. A good deal is secured from dandelion and fruit-bloom, especially early cherries and peaches.

C. G., Illinois.—1. What is the value of black or thorn locust as a honey-yielder?

2. How many stands of bees would 75 black-locust trees support?

3. How far will a bee fly for honey?

A. 1. Black locust, where it grows, is usually regarded as a good honey-yielder. It comes quite early in the season, and yields considerable honey. But there are not enough trees, usually, in a locality to yield any considerable amount of surplus. For that reason locust honey is seldom or never seen in the markets; but, like the honey from fruit-bloom, it is invaluable for building up colonies in the spring and supplying them with stores until clover comes on later.

2. It would be impossible to answer this question, as there are no reliable data available; but 75 locust-trees would give quite a boost to five colonies. If there were 100 colonies in the locality we should expect a little honey in the hives, but not enough to make any appreciable showing.

3. This is a mooted question. Very often bees will not go further than a few hundred yards from the hive. If there is plenty of flora available in a short distance they will not go any further than is necessary. It quite frequently happens that bees do not go more than half a mile; but it is not uncommon for them to go two or three miles. Much depends on the lay of the land, the direction of the wind, and the amount of flora available in the immediate vicinity of the hive. Bees have been known to fly even ten miles across a body of water for nectar; but they will not go that far over land.

W. H. H., Pennsylvania.—1. Would it be proper for me to requeen in the spring or in the fall?

2. Would I lose on the honey crop by doing it in the spring?

A. 1. It is usually cheaper to requeen in the fall. In the spring they are high-priced. Moreover, a colony will winter better with a young queen than with an old one; but if a colony is queenless in the spring it should be requeened, of course. Sometimes an old queen shows that she is failing, and then lays only a few eggs. When this condition is found she should be replaced or else her colony be united with a weak colony having a good queen.

2. No. On the other hand, you would gain, providing the queen already in the hive was inferior or failing. To requeen does not necessarily cause any serious interruption in brood-rearing. In fact, we make it a practice to remove one queen and cage another at one opening of the hive. Usually 48 hours will compass the change of a queen-mother.

H. W. K., Pennsylvania.—When is the proper time to commence to feed bees in spring in order to build up good strong colonies? What do you advise feeding, and what quantity? What kind of hive is best for this section for comb honey where the bees are wintered out of doors?

I have ten colonies, and wish to get them in condition to produce all the fancy comb they can this season.

A. It is not advisable to feed bees liquid syrup much before fruit-bloom. If bees are running short it is advisable to give them a comb of stores from some other colony that can spare it, or a slab of candy that can be laid up on top of the frames. Any liquid food given them in March would cause them to rush out to the fields and many of them be chilled and not get back. If a colony is short of stores it ought to have anywhere from five to ten pounds of syrup to carry it along until the first honey-flow comes in.

For your locality, if you wish to winter outdoors we recommend outdoor winter cases or double-walled hives.

P. B., Minnesota.—How can one tell a queen from a worker-bee in swarming time?

A. During swarming time a queen-bee is very much larger than ordinary worker-bees. The difference between the head, shoulders, or thorax, is not very marked; but the main difference is in the appearance of the abdomen, which is much larger and longer.

J. R. L., Pennsylvania.—Last season one of my colonies seemed to be outstripping all others in storing honey. By the middle of June they had a super two-thirds full. The others had done but little in their supers; in fact, our honey-flow seldom begins here before the middle of June. I noticed that this particular colony had a large excess of drones; and as I wanted to make this colony a prizetaker I used a trap for several days and caught off all drones. I know that drone comb should not have been there. Well, from that time on they sulked and never put another pound of honey in the super. About the latter part of July it swarmed. We know bees will kill off their drones when a flow of honey ceases. Could it be possible by catching off the drones at some particular time to cause a colony to feel that the honey-flow is over?

A. It not infrequently happens that the progeny of one queen will far outstrip the progeny of all other queens in the same yard. When a queen goes away ahead of the rest she should be used for breeding, because many of her daughters will be very apt to follow her lead in the matter of honey production.

We hardly believe that the removal of the drones had anything to do with the stoppage of the honey-flow. It was a mere coincidence—that is to say, the honey-flow had begun to let up about the time that you applied the traps to catch the drones.

H. C. L., Illinois.—I have been using the large Holtermann quadruple winter cases; but I have found that my bees have been drifting. One colony in one side of the case will be considerably weaker than the other with the result that the bees get mixed during their playspells. What should I do to overcome this?

A. Equalize by taking from the stronger one a frame of hatching brood occasionally. If thru the process of drifting the strong one has most of the bees the surplusage may be shaken into the weak one if done immediately. If not we would give the unsealed brood to the strong one and the hatching brood to the weak one. Keep on giving it hatching brood from the other until their strength is the same.

U. A. S., Kentucky.—How can I distinguish the playspells of my bees from robbing?

A. The demonstration in front of the entrances in either case is much the same; but a beginner may make sure that a playspell will subside in a few minutes, while a genuine case of robbing will grow continually worse. When the bees are having a general playspell there will be no bees struggling against each other as in the case of robbing; but a playspell at its height very often, even to a veteran, looks like a case of robbing where the colony has been overpowered and the inmates of the hive are putting up no defense. Where one is uncertain, if he will wait just a few minutes he can easily decide which it is. If a playspell it will subside in a very few minutes.

F. R. N., Alabama.—My neighbors complain that my bees are driving the cattle away from their watering-troughs.

A. If there is no natural creek or spring near by, it is advisable to place in the yard a tub or pail of water having floats in it. If the water is sweetened a little at the start, the bees will soon learn its location.

L. B., Illinois.—Does the Illinois law forbid putting beehives close to a country road? If so, how close can I put them to the road?

A. There is no general state law anywhere, so far as we know, that forbids putting bees close to a country road; but as a matter of precaution, we would advise setting the bees back a hundred feet, more if it is practicable. If the bees can be located on a hill so that the line of flight will be above the traffic of the road, they can be much closer, but it is a good rule to put bees as far away as possible from a common highway.

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

THE first examination of our hives disclosed a discouraging number of those moldy, mildewy combs again, from one to three in nearly every hive, and in every case to the north side. The winter was one of unusually heavy humidity and unusual cold, especially after Christmas. Some of the hives had condensed moisture on the inside of the super cover and on the top-bars.

* * *

"*Ample* rainfall" did I say in that April report? Today, April 6, we show a total precipitation of more than 21 inches since January 1—an excess over normal of more than 6 inches. There has been rain and bad weather during fruit-bloom, and it has been cold,—frosts and even freezing.

* * *

Whatever may have happened to crimson clover and alsike, the present prospects for white clover are unusually good.

* * *

With deep sympathy we learn of the death of Mr. George H. Rea's wife, and greatly regret his subsequent retirement from the extension work in North Carolina.

* * *

Practically half our little yard was in two stories this winter, the other half in the brood-chamber only. In the single-story hives the brood averaged a little above that in the double stories; there were more stores left, seeming to indicate a lighter consumption and fewer mildewed combs. In every colony in the yard, the brood-chamber was on the south side of the hive.

* * *

Out near Franklin, Tennessee, there are many acres of turnip grown for seed. It blooms about the first of April, and the bees in that locality build up on it with a rush. This year it was killed by the late freezes. Mr. Frank Pellett, who was in Nashville the first two days of April, had hoped to see this bloom with the bees working on it, but the freeze made it impossible. Moreover, it rained practically the entire time he was there.

* * *

When the question was read at the Tennessee state convention, "How many of those present pack their hives for winter?" it was interpreted by the president to refer to winter cases, and there were no affirmatives. In our own yard we had a few shallow supers of leaves on, and, in the case of one rather weak colony, had removed three combs, centering the remaining seven, packed the sides with leaves, and put a super of leaves on top. At the time of the first examination, March 31, they had 4 combs of brood, plenty of bees and stores, and no mildewed combs. Only one colony in the yard had more brood, and only one other as much, the most of them having 3 combs. I should like to give the little packing the credit; yet Mr. Bartholomew, backed by Dr. Phillips, maintains that unless all four sides and top and bottom are packed, no good is gained. So I suppose the queen gets the credit for the fine way the small colony came thru. Yet it does seem as tho if a lot of packing is better than a little, a little would be better than none.

* * *

If only in some magical way the people who try to keep bees without reading or study could happen across such a definitely instructive article as that entitled "Spring Management," by Dr. Miller, page 255, April, they would surely be immediately converted into readers and students. One such article is worth more to the reader than the subscription price for many years.

* * *

I wonder if Dr. Miller could have said more definitely about what time he would make that first inspection, when good colonies might be expected to have four or more combs of brood—not definite as to date, of course, as that differs so with latitude, but as to the advancement of spring during fruit-bloom, perhaps, or when the maples are dropping their seedpods and putting out leaves, and cardinals are calling clear.

Have you as fixed rules for the amount of stores in spring, Dr. Miller, as for brood?

* * *

The Division of Extension, College of Agriculture, Knoxville, with the co-operation of the Agricultural Department of the N. C. & St. L. Railway Company, is sending out a demonstration train thru several counties, giving exhibits and lectures covering all phases of poultry-raising and beekeeping, and the marketing of these products. Mr. Bartholomew accompanied the train, which left Nashville April 8.

* * *

On Thursday, April 5, there was a meeting of beekeepers at the yard of Mr. J. Ivan

Banks, Dowelltown, for the purpose of forming a county organization. Mr. C. E. Bartholomew was present, and they had looked forward to having Mr. Pellett with them; but unfortunately, on the 2d, Mr. Pellett received word of an accident to his little son, and hurried home. We are all hoping the accident may not have proven serious, and we greatly regret missing Mr. Pellett at the various meetings he had planned to attend—including that of our own county. And we hope he will come back.

* * *

There was only a baker's dozen present at the meeting in our apiary to organize the Davidson County Association, but we organized. The constitution which Mr. Bartholomew presented as the one adopted with some modifications by other county associations states the object to be "to promote the beekeeping industry of the county, to unite the beekeepers in one compact body, to create a power the units of which, working in harmony of purpose, will foster fraternal relations and intercourse among the beekeepers; safeguard the material interests of the industry, elevate the standards, and improve the methods of beekeeping; encourage and help to introduce beekeeping instruction into elemental and high schools; secure the enactment and enforcement of just inspection laws, and enlighten the general public regarding the value of honey for a pure food."

Now, that's a whole lot to take upon one's organized county self as one's object, and probably for a while this particular county organization will content itself with the "material interests" and the "fraternal relations." But that, I contend, is a beginning, and a good beginning. Mr. Allen was chosen president, Mr. E. J. Adkisson vice-president, and W. Edward Lee secretary-treasurer. Later we shall have committees, and the committees will do things.

Of course the feature of the meeting was Mr. Bartholomew's convincing address setting forth the advantages and possibilities of organization—co-operation of effort for the large producers, and instruction for the beginners. There was evident an earnest appreciation of this opportunity, and plenty of humorous, friendly conversation thruout.

And here is the importance and significance of any such meeting. Davidson is only one county in one state in this great country; but get this sort of thing sufficiently widespread, and see what you will have. If, for instance, the beekeepers in every county in Tennessee should band themselves together to make the individual members high-class and progressive, and their county a leader in the industry, what couldn't and wouldn't Tennessee as a state achieve? Then suppose that same thing of every state in the Union. And that is the end toward which any effort, however small and seemingly unimportant, works; and the possible final results are scarcely to be predicted, as to new standards of efficiency and success.

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

BEES had a partial flight March 22 in this part of Ontario—their first outing since November. Then on the 25th and 26th the thermometer went up to about 60, and all colonies flew nicely. In spite of the long and exceptionally cold winter, the bees seem to have wintered splendidly outdoors —at least all who have reported to me so far tell that story, and our own bees are in nice shape at all of the yards so far as we can judge at this season of the year. Today, April 5, snow has been falling nearly all day, just to remind us that summer is not here yet, and that winter still has a kick or two left.

* * *

We have just returned from the yard 100 miles from home, where over 250 colonies wintered outside. This yard was never visited by any of us since last October, and not a person up there did a tap to the yard till on the evening of March 21, when some snow was taken from the entrances, as prospects seemed good for a flight the next day. Judging by five years' wintering on the let-alone plan, I have come to the conclusion that all the tinkering done at home yards, such as raking out dead bees from entrances, etc., amounts to little; but of course there is a certain amount of satisfaction in doing this "tinkering," even if there is no money in it. Did you ever spend some time in helping some poor chilled bees to get into the entrance of their hive after being caught out by some sudden changes of weather, even when you felt that you were doing very little actual good from a monetary standpoint? We have often done that very thing, actually taking a great deal of interest in the work. On the same principle, no doubt, a lot of little things are often done in connection with bees near home that are not possible to do at out-apiaries, and—well, I guess these bees at the out-apiaries are none the worse for our seeming neglect.

* * *

Clover looks fine so far; and as frost is about all out of the ground, the chances are that a little heaving of the plants will now occur. "Heaving" is directly caused by hard freezing at nights followed by warm sunny days; but even in this kind of weather the danger is never as great when there is no frost under the surface of the ground.

* * *

That editorial on foul brood, page 250, last issue, should be read by all beekeepers. One comment made on the bulletin discussed (No. 431), to my mind should be modified unless American foul brood differs in different localities—a thing that is hardly probable if at all possible. I refer to the statement that, previous to the publication of this bulletin, the ordinary foul-brood inspector could not be sure whether he had a case of dead brood or American or European until a bacteriological determination could be made. Personally I believe the characteristics of American foul brood are so uniformly the same in all cases that no foul-brood inspector should ever make a mistake in diagnosing this disease. With European foul brood and sacbrood it is an entirely different matter, and an expert is apt to be deceived. The definition given by the editor, of how these two latter diseases work, is about as good a one as we have seen. "European foul brood attacks the larva mainly before it uncurls. Sacbrood attacks its victim after it has stretched out on the bottom of the cell walls, and a day or two after it is sealed, or just about the time when it begins to spin its cocoon." By remembering these simple facts, generally there should be no difficulty in telling the two diseases apart. As to American foul brood, while, as the editor says, in some respects it resembles sacbrood, yet the absence of all ropiness, and the well-known odor of American foul brood, should prevent any confusion on that point.

* * *

PAPER PAILS FOR HONEY.

In view of the increased price of honey-pails, and the prospect of a still higher price in the near future, the question of containers for honey, in case we get a crop, is a matter of live interest here in Canada. Manufacturers are asking for orders to be placed right away so that they can arrange as to purchasing tin, etc., before there is another advance in raw material, not to mention wages of employees increasing, etc.; and no one can say that their request is at all unreasonable. At the same time many of us hesitate to stock up with pails when not being sure of a crop, for, aside from any question of capital being tied up for possibly a year or more, personally I dislike to have a large stock of pails carried over, as there is always danger of rusting, particularly if one has not first-class storage facilities.

As a means of helping out the situation, paper containers are being investigated; and, judging by some samples shown to me a short time ago, it looks as tho they might be a success. To be sure, paper has been used in the past for extracted honey; but in so far as we have noticed, only honey in the granulated form has been thus handled. Of course the honey was placed in the paper containers when just ready to granulate, and it soon became a solid mass. The samples shown us are of the pail pattern, and are warranted to hold water or other liquids, so they should hold honey all right. They are made of heavy paraffined cardboard, the waxing being done by some special process. The name and address of the producer, and any directions as to keeping honey, or other advertising matter, can be printed on the pails as desired. No prices were quoted, so at present we can give no more detailed information.

* * *

THE POSSIBILITIES OF CO-OPERATION.

On the first page of the February issue, the editor, in referring to the possibilities of co-operation, says that Ontario is well fitted to make this system a success. His reasons are that the "territory is not large and that the beekeepers have covered practically all the good ranges in the province." "Territory not large." Let us consider that point a minute. From old Glengarry in the east on the St. Lawrence, to Essex County in the west, it is about 500 miles. From Toronto, the center of this line, it is 225 miles straight north to North Bay. This comprises what is generally known as Old Ontario, and it in itself is no small territory. This territory, as the editor says, is in many places at least pretty well stocked with bees. But starting from North Bay and running north and west we have another part of Ontario so large that the great Empire State, a dozen or so "Little Rhodies," and a few other of the states could be tucked away in it; and this latter territory is destined, in my humble opinion, to be the place for the greatest expansion of the bee industry in Ontario in the near future. If I were 20 years younger nothing would please me better than to take a plunge into this great north land, for assuredly there are possibilities there unequaled or unexcelled, at least in the older parts of the province.

As to co-operation, desirable as it may be, the plain unvarnished fact is that such a move has never been successfully accomplished until the people directly concerned were almost if not actually forced by circumstances to organize. Generally speaking, then, the time is not yet ripe for such a move to be successfully launched here in Ontario.

* * *

The question as to how far bees will fly, discussed by Mr. Doolittle and the editor in the Dec. 1st number, is something that will never be settled to suit all conditions and localities. As mentioned before, for a number of years we had buckwheat a little over three miles from our home apiary; and while the bees near these buckwheat fields stored surplus our bees gathered never a drop. On the other hand we saw thousands of our bees working more than three miles from the apiary a few years ago at the Lovering yard; and on another occasion, when all clover was killed with drouth on our side of the bay, the bees flew two miles to the water and then across another two miles to the opposite side. This last stunt would not be expected to be profitable; but the bees certainly flew the four miles. After all is said and done on this question, tho, very few beekeepers indeed would care to locate an apiary where the bees had to depend on their main source of nectar located two miles or more away.

IN TEXAS

By F. B. Paddock, State Entomologist

LESS talk is heard now of the prospective honey crop and the price to be obtained than of the tremendous increase in the price of cans. Already the reports indicate that it may be impossible to get tin containers at any price later on. It would seem that the beekeepers should be interesting themselves in the possibility of wooden containers. It is very interesting to note that the beekeepers of California have already decided to use barrels, and market large orders of honey.

* * *

There has been some little discussion of late in the state papers about the best method of transferring bees. Each writer presents a different plan, and any one of those given should be successful if the directions are followed carefully. The good that may come from these suggestions is the getting of more bees out of gums and into modern movable-frame hives. In so doing the beekeeper will be complying with the foul-brood law, and, at the same time, placing his bees in position to make him due returns for his investment. The one marvel of beekeepers who have transferred is the great amount of honey that can be made from a colony of bees.

* * *

It is to be regretted that the regular session of the legislature adjourned without passing the experimental-apiary bill. This bill carried a great future for the beekeeping industry of this state, but perhaps another concerted action will be made at the next legislature for such a bill.

* * *

Messrs. Lutcher Stark and R. L. Lester, of Orange, Texas, were visitors at the Experiment Station Apiary. These gentlemen came from a section of the state that is neglected from the standpoint of beekeeping. They are enthusiastic over the possibilities of their section, and it is certain that their methods will surely bring results.

* * *

With us the spring has been extremely dry, which makes very trying conditions after a very dry winter. The cold wave did not hit so hard in this section, and the bees were hardly kept from flying. The bees seem to be gathering pollen and honey every day. The pears were in full bloom on March 15; on the 18th the bees were working on the oak blooms, and from the 20th to the 30th the willows were in bloom. By careful attention our bees have built up eight frames of brood and will be ready to divide in a few days.

* * *

Distressing reports have come from beekeepers in one of the fruit sections that the fruit-growers were spraying their trees while in full bloom, with the result that the bees were being poisoned and the industry threatened. Unfortunately, there is not a law in this state, as there is in many others, which prohibits the spraying of fruit-trees when in full bloom, to protect the bees. It has been acknowledged for many years that no extra benefit could be derived from spraying fruit-trees when in full bloom, and the recommendations usually say spray when 90 per cent of the petals have fallen. At such times there is very little for the bees to get from the fruit-blossoms, and but few are found around the trees. The fruit-grower should realize the great value of the honeybee as a pollenizing agent, and should protect rather than destroy it.

* * *

In this state great quantities of cotton-seed meal are used for feeding beef and dairy cattle, and hogs and sheep. Reports have come in now for two years of the troubles coming up between the beekeeper and the stockman. For the most part these have been of a more or less local nature and were soon settled. It seems that in a dearth of pollen the bees will gather cotton-seed meal, either from the storeroom or the feeding-trough. The bees then become a nuisance to one working around the feed-room and to the stock in the feed lot. To what extent the stock is stung by the bees is not known. How much cotton-seed meal is carried away by the bees is not known, altho one report says an entire sack (100 lbs.) was carried off by the bees. The last report to come in is that of a stockman who was annoyed by the bees from several yards in his vicinity. The charge was made that poison had been used to get rid of the bees. The bees died rapidly, regardless of the trouble. This raises an interesting question which should be investigated as soon as possible. What is the effect of cotton-seed meal fed in unlimited quantities to a colony of bees? Considerable has been said already, but facts which will stand cross-examination are lacking entirely.

* * *

The above brings up the discussion of artificial pollen and the value of cotton-seed meal as such. It has been evident for some time that much loss of bees could be prevented by the use of an artificial pollen. This is evident in one of the following reports. Bees will not seek an artificial pollen when the natural pollen is available. We have tried to feed cotton-seed meal, even mixing in some honey. The bees took up the honey but refused to take the meal.

* * *

On March 4, too late for our last report, a severe cold wave hit Texas and was especially destructive in the southern portion of the state. In the Rio Grande section most of the citrus fruit was at least severely damaged. This has made a very different outlook to early-crop prospects; in fact, in the latter part of March the bees were weak, with little or no stores, and just making a living. The season was put back thirty days, and not many beekeepers expect a spring crop of honey. Further north the extreme drouth was a serious handicap; but in spite of this the bees were building up on the stores, which were going down rapidly. In some localities of the southwest section the late freeze was disastrous. Many colonies of bees died, leaving plenty of stores, apparently from lack of pollen. Since the freeze the bees have built up slowly and irregularly. With the continued drouth there will be but little honey except from mesquite, which is usually best in dry seasons. In one locality feeding has been resorted to in order to keep the fine start the bees had made. The queen-breeders in this section felt the effects of the adverse condition.

FLORIDA SUNSHINE

E. G. Baldwin

A FRIEND of mine, a beeman, tried to rear some queens the last of February, near this place. He failed to realize his expectations for the weather was too cool and changeable. I have always found that changeable weather is about as hard to combat, in queen-rearing, as steady cool weather. Since the freezing temperatures of early February, and the damage to citrus and other trees and shrubs resulting, the forage has not been equal to normal. This too tends to retard queen-rearing. Better wait now till the middle or last of March or early April, brothers, for your queens. Wait till settled warm weather. It is more than likely that there will be some orange bloom for two months or more, and perhaps in May and June, owing to the freeze. This will make ideal queen-rearing weather and conditions. Better plan to do your requeening a little later than usual this season. But, be on the alert to take advantage of the first steady warm weather and honey-flow.

* * *

By the way, when you are rearing and introducing your queens don't fail to try out that honey method of introducing queens; then report. But don't fail to close the hive, almost, and see that robbing does not start. Never mind taking honey from the same hive. Any honey will do. That is not the secret. The secret, if there is any, is in using plenty of honey, and almost closing the entrance.

* * *

At this date, April 1, we note with pleasure that, while the mangrove in the vicinity of New Smyrna, and near the shore at that, is frozen practically down to the roots, eight miles further south, near Oak Hill, and further out in the water, it is hardly hurt perceptibly. There may be a crop from it this year as big as ever. Let us hope.

* * *

We might almost call the month of May the month of scrub palmetto. April, May, and June are all, it is true, graced and beautified by those queenly racemes of creamy white that droop, plume-like, amid the saw-blade leaves and palmy fronds of the saw palmetto (*Sabal serrulata*). But the major part of all the honey secured from this source is secured in the charming month of May; hence the assertion that heads this paragraph. It begins to bloom about the end of March in the extreme southern portion of the peninsula, the blooming period creeping up the calendar as the bloom creeps up the state, till in the vicinity of the 29th parallel (the northern limit of profitable secretion), the yield falls mostly into late May and early June; and so nearly two months elapse between the two extremes of blooming time.

* * *

Cold winds and chilling weather are over; all colonies are strong, if normal, and drones are plentiful. Oddly enough, in districts near orange-groves, all swarming is over by palmetto time. The bees seem to swarm themselves out, and by this time are settled down to business in dead earnest. These columns have often directed attention to the fact that the blossoms of this palmetto are extremely susceptible to changes in temperature, etc. Too dry weather during bloom will wither the blossoms, and too much moisture will mildew them. In those "off" seasons, thousands of flies, moths, wasps, butterflies, and sweat bees will visit the blossoms, throng over and about them, but nary a honeybee. Why this is, I could never determine. But such are the facts. In the vicinity of New Smyrna we count on a good yield from this source about once in three years, and perhaps a fair yield every other year. At present writing (April 3) the racemes of blossoms are full length, fully a month earlier than usual here. It looks like a good palmetto year, but you never can tell.

* * *

There is no finer honey in the country than pure scrub-palmetto honey (the term "scrub" is locally applied to the saw palmetto). And, thank goodness! it is not affected by frosts. This year, after the disastrous freeze of February, the beekeeper welcomes anything that will keep its vitality and grow and yield honey thru cold and heat alike. Almost all portions of the state feel the beneficial effects of saw-palmetto bloom; but only near the lagoons, marshes, hummocks, and river courses, or sea coasts, does it really produce surplus in paying quantities. In favorable localities the yield per colony may reach an average of 100 lbs.; and what a honey it is!—pale lemon in hue, thick as molasses in January; in body, clear, aromatic—food for the gods. Mr. O. O. Poppleton pronounced it the finest honey in Florida.

There is no better time for requeening than the blooming period of saw palmetto.

* * *

The following quotation from a large manufacturing concern in our state will speak for itself:

> *Dear Sir*:—We shall be glad to receive a sample of your honey. We are using honey actively and prefer to buy it from Florida producers rather than send to Philadelphia, Baltimore, New York, or Boston. Yours very truly,

Such signs as this point to an increasing consumption of our own honeys within our own borders; and the more Florida uses in her own boundaries, the less will need to be shipped north to glut the markets there. It is to be hoped that our state may come into the position of Texas, that consumes so large a per cent of her own products, and very much to her credit. We urge Florida beemen to ship all honey to Florida jobbers so far as possible.

* * *

The sources of honey in Florida seem to be increasing; at least, beemen are discovering that more and more plants and trees and shrubs are nectariferous. Not long ago a plant was sent in for analysis from the southern part of the state—a plant that proved to be the redroot (*Gyrotheca tinctoria,*) which is reported to yield honey in considerable quantities. It begins to bloom in the middle of June, or a little later, and continues till September. It prefers damp soil, tho it grows fairly well thru the low pine woods or flatwoods. Bees work on it all day long. The honey is said by those who have it to have a rather acrid and decidedly unpleasant taste. One beekeeper reports that he *thinks*, but does not really know, that it was this source that spoiled the flavor of his cabbage-palmetto honey. See also the report in the Oct. 15th issue, of a beeman who reported that his cabbage-palmetto honey was poor in flavor. It may be that it was this redroot that did the damage. The flower takes its name from the dark red root, which colors the flesh of swine pink when used as forage.

* * *

Many of GLEANINGS' readers will doubtless remember Mr. W. J. Young, formerly with the Chemical Staff at Washington, D. C., whose name appears on the excellent government bulletin containing two valuable publications, the one entitled "The Chemical Analysis of Honeys," and the other "The Identification of Honeys by Microscopical Examination of Pollen Grains." The latter is by Mr. Young. While no longer connected with the federal office, he is still doing good work in other fields. A recent letter from him seems to have some points worthy of being reprinted here. With his permission portions are here given. He says: "I am referring your letter to Mr. B. J. Howard, the Chief of the Micro-chemical laboratory. He will, I think, make the examination for you. Blossoms for examination should be gathered as soon as open, and dried as for the herbarium. Usually an ounce of honey is plenty for microscopic examination."

* * *

About November last, two young men of the inspection squad of the Florida State Plant Board, Gainesville, Fla., appeared at our abode and announced that they wished to examine critically the leaves of all orange-trees on the place. Their aim was to ascertain whether or not any signs might be appearing, to indicate the presence of the dreaded citrus canker. After they had made the examination, and found that no disease was present here, and while they were at the hydrant, cleaning up a little before taking their auto again, I engaged them in conversation. I had noted the special suits they used for all inspection work, and at once the idea came to me, "What a dandy bee-suit!" I spoke about it to the young men, who told me that the suits could be obtained of the Plant Board at Gainesville, and cost only $1.25 each. Well, the upshot of the whole matter was that I wrote to the Board and ordered a suit as a trial dress for the beeyard. When it came I donned it and sallied forth, looking like an inspector sure enough. But, altho I appeared like an animated Santa Claus in summer time, I was pleased with the effects, and the more I have used the suit the better I am pleased.

The suit in question is made of white cotton cloth, like a heavy cambric cloth; opens down the front, buttoning up close all around the neck, and is made in one piece from top to toe. When the leggins are put on over it, and the veil tucked down under the neck-band, and that buttoned, I defy any bee, even the most savage and the most persistent, to gain admittance to the operator. The special merit of this suit, as I see it, is its lightness and color. White is less offensive to bees than darker hues; there is no doubt about that; and with a light pair of overalls, and a light jumper or blouse under this suit, it is not uncomfortable even in warm weather. It has a pocket in the front, handy for the hive-tool, and one in rear for handkerchief, etc. Plenty of room is one of the chief merits in a bee-suit; and I made a point of getting this one large enough and to spare. I do not regret it. Not long ago I was surprised to receive the following letter from Mr. Wilmon Newell, Plant Commissioner, of Gainesville, which is interesting enough to deserve a place in GLEANINGS for Florida readers:

> *Dear Sir*:—I have noticed your letter of January 31, with which you sent a check for $1.25 for an inspection suit to be used in connection with your beekeeping work. I have had considerable experience in the past with bees myself; but the possibility of the inspection suit being adapted to beekeeping work did not occur to me until I noticed your letter. From a theoretical standpoint, at least, it looks as tho the suit should be well adapted for this purpose.
>
> After you have tried it out thoroly I should be glad to hear from you as to how well it answers the purpose.
>
> WILMON NEWELL,
> Gainesville, Fla. Plant Commissioner.

* * *

METAL COVERS, AGAIN.

A correspondent from faraway Seattle writes to ask for more detailed description of the metal covers described and advocated in GLEANINGS, June 15, p. 472. Further information on the construction, especially of the wooden part, is requested. We have referred him to any of the standard dealers in bee supplies, advising him to purchase one cover complete in the flat, and use that as a guide in case he desires to make his own covers. He adds: "Our winters are as wet as your summers, and I have found all the trouble you have with ordinary covers." Friend Carr, of New Jersey, has also written, advocating canvas, heavily painted, in place of tin or galvanized iron (the latter being our preference.) We replied, "Not in Florida." Our hot boiling sun in summer, following close on the heels of a soaking rain, will almost warp a railroad rail! We want covers that last a lifetime—and longer.

AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado

SPRING is loitering this year. A year ago she was with us in all her loveliness; but as yet, April 6, we can scarcely say she has arrived. The bees are getting ready for her, and breeding is going on at quite a satisfactory rate. Some hives have four frames of brood and are spreading rapidly. The maples are in bloom, and dandelions are beginning to appear. There is an abundance of snow, and we should be able to have all colonies ready for the harvest in June, July, and August. Those who are contemplating using the Alexander plan of increase may succeed; but the season is so late that it may not prove successful.

GRANULATION OF COMB HONEY.

We read of beemen who are changing from comb to extracted honey production. Perhaps we can explain this partly by the fact that comb honey has been so subject to granulation. The granulation of Western comb honey is a serious indictment of it. This may all be averted with a little diligence. The honey must be shipped early, sold early, and consumed early. This can best be done by having all cases nailed in advance, all cartons ready, and the selling plan outlined in advance. There is no reason why the comb-honey crop may not be sold before being harvested. This is true of the walnut crop—it is sold before the walnuts are off the trees. The power of advertising is capable of doing this, and advertising will solve the question of granulated comb honey. By advertising, the comb honey of the United States can be marketed before there is any chance for granulation.

DANDELIONS.

Editor Root says on page 252, April, that dandelions yield little or no honey. It would be interesting to hear reports on this from various parts of the country. Here in Colorado dandelions yield honey—sometimes in abundance; and whenever they are plentiful some honey is gathered. It is common for the hives to be filled with dandelion honey, and a few beekeepers have extracted dandelion honey and put it on the market. Many seasons have I seen substantial amounts of dandelion honey stored in the brood-chambers, and not infrequently have the bees stored and finished dandelion comb honey. Most of the dandelion honey stored, however, is consumed in the hive during the interval following fruit-bloom and before alfalfa yields nectar. But dandelions are more loved by beekeepers for the nectar secured than is fruit-bloom in many localities. We can get surplus from dandelions if we want it—not every year, but often.

WINTER LOSSES.

Losses are heavy in western Colorado, running close to 25 per cent. Eastern Colorado has been more favored—the losses being negligible. Take Colorado as a whole, we may reasonably expect a crop unless too many unforeseen obstacles arise. The high price of hay will cause early cutting of the alfalfa, and better farming everywhere will be practiced, which works against the interests of the Western beekeeper. Sweet clover growing on land unsuitable for cutting is one of our main stays. Greater alfalfa acreage will be sown in the next few years. Colorado has about five hundred thousand acres of alfalfa; and when that acreage is increased to a million acres, our bee population can be increased a half, anyway.

* * *

From present indications there will be a serious food shortage in the United States this year, and honey will reach an exalted figure. The beekeeper who does not bestir himself will be the loser. Our duty is to produce! produce! How many tons are you good for? With sugar at $10 per hundred, and maple syrup selling at $2.25 per gallon, should not extracted honey bring 12 to 14 cts. wholesale?

* * *

Now about the queenless colonies of good strength—just send to some queen-breeder for a dozen or so queens and have a few on hand at all times for the needy colonies.

* * *

With bee-supplies selling at the prices now asked, what chance is there of being able to increase honey prices commensurate with the increased cost of production? The cost of supplies is now almost double what it was fifteen or twenty years ago, and the price of our honey has not doubled as yet. We may see the price doubled soon, however.

HEADS OF GRAIN FROM DIFFERENT FIELDS

May, 1917

BY GRACE ALLEN

I cannot sing of bees and flowers
This best of all earth's Mays,
When men must meet such tragic hours
Thru all the lovely days.

The cardinals are calling clear,
The raptured mockingbird
Sings sweeter, tenderer, more near
Than ever I have heard.

The bees are humming round each hive—
You know the old, old way,
That makes you thrill to be alive
On such a tingling day.

Beneath blue skies and waking trees
Where green shows more and more,
There stirs and floats upon the breeze
A flag above my door.

* * *

The Influence of Young Queens on the Swarming Question

I want to ask some questions, and should like some advice. Last summer was the first time for me to clip queens. I had about all the bees I thought my location would stand for, and attempted to prevent swarming; and in case I did not succeed I wanted to hold the bees on their brood. I tried a plan given in Dr. Miller's book. When the swarm issued I caged the queen, cut all cells, left the caged queen in a Miller cage shoved in at the entrance. After five days I cut cells again. In another five days I cut what showed up again and released the queen. Part of the colonies treated this way went to work. Some of them did not let up work at all, but the rest of them swarmed repeatedly. I would cage the queen again and see that there were no cells; let them go for a few days, and then release the queen. It made no difference. They would not work—sulked and hung out. I removed the queen in a few of them and gave a cell. When the cell hatched they went to work all right after losing two weeks or so of a fine clover flow. To prevent swarming I went over all colonies about once in ten days and destroyed queen-cells that might be started. I had about 15 colonies out of 120 that did not make any preparation to swarm. These were my best surplus producers of course. These made from four to nine Danzenbaker supers of comb honey each. I tried several other schemes to get those sulkers to go to work. I removed all brood and gave empty combs. I gave some of them ten combs of sealed honey, with the idea they would carry it upstairs to give the queen room to lay. I gave ten frames of full sheets of foundation. All these schemes looked alike to these bees. As soon as the queen was released they would swarm. But all colonies that had the queen removed, and a cell given, sulked till the queen hatched and mated, and then went to work.

I have been thinking that if I would raise a lot of queens and have them ready in nucleus I could at swarming time exchange queens, giving the colony a young queen. If the old queen was not too old, and a good one, I introduce her to the nucleus where I got the young one, and use her again, or else raise enough young ones to do the business. This looks like a lot of trouble to me; but if I thought it would do the business I would try it once any way, as I have quite a lot of hybrid and black queens.

Do you think it a good plan, if the stock in the colony is good and the chances for pure mating good, to remove the queen and leave just one cell after the swarm returns? Would the bees lose too much time to make the plan a poor one by waiting for the young queen to hatch?

Notwithstanding my amateur bungling I got a crop last summer that looked good to me. We had a great clover flow that lasted till the dry weather stopped it in August. I worked my best colonies for comb honey and the rest of them for extracted. I have sold 243 cases of comb honey and 5000 lbs. of extracted honey.

Sabetha, Kan. Frank Hill.

Dr. Miller replies:

Bees are pesky critters, aren't they? Your experiences remind me of some I've had myself. I would carefully plan out a certain scheme that I felt sure would work—couldn't help but work—and then when submitted to the bees they would none of it.

One of these schemes was the very one you are now counting on. I decided I would get a young queen into each colony in one of the out-apiaries, and then good-by to swarming. To get young queens ahead of swarming-time is easier said than done; but it may be done, even if we send south for queens. At any rate, I got in the young queens, and then—the bees swarmed!

The fact is that the presence of a young queen, no matter if she has not yet been laying a week, will not overcome the swarming fever if it is already there. The presence of a young queen, however, will, almost without exception, prevent the development of the swarming fever, if she enters upon her duties while yet no swarming fever is present. The late C. J. H. Gravenhorst gave it as a rule without exception that a colony having a queen reared in the hive in the current year would not swarm that year. That may be true with blacks—his bees were blacks—but there are rare exceptions with Italians. So if you cannot get the young queen established at laying before

HEADS OF GRAIN FROM DIFFERENT FIELDS

the swarming fever has started, then wait till the swarming fever is over. The pleasant fact in this connection is that, if the colony be about ten days without any eggs, the swarming fever will be over.

From this it will be easily seen that when a colony swarms, if the old queen be taken away and a young queen given in her place, and the swarm then returned to the brood, the bees will swarm out again, just as they would if the old queen had not been taken away. Of course there are exceptional cases in which the return of the old queen with the swarm would not be followed by swarming; and it is possible that in such cases a young queen might have a little better result; but such cases are so rare as to be hardly worth considering.

In the treatment you relate, you killed cells when you caged the queen, five days later, and then five days later still. That was three times—once more than was necessary. All that is necessary is to make sure no virgin hatches. You will accomplish that if you kill cells at the time of swarming or any time within five days, and then a second time ten days after swarming.

It is quite possible that the result might have been different if, instead of caging the queen, you had kept her in a nucleus.

You inquire how it would be ''to remove the queen and leave just one cell after the swarm had returned.'' I don't know that I could tell just why, but I think the plan would work well in some places and not in others. It may be well worth while to try it. The colony will be little more than two weeks without a laying queen, if so long as that, and would be likely to keep at work without sulking. C. C. Miller.

* * *

Providing Water by Means of a Candle Wick

''Water! water!'' my bees seemed to call, as they flew about, and lit and stiffened in a temperature of 52° this 20th of February. I hurried to the cellar, got a number of empty jelly-glasses, some candlewick, a good length of foundation wire, tacks, hammer, and pliers. Close by the side of their narrow entrance, and at about three-fourths the height of a jelly-glass, I drove two tacks half way in, and about four inches apart; then wrapped one end of a short length of wire around one tack; set the glass between the tacks, so that it rested on the alighting-board, and bound it to the front by bringing the wire around it and wrapping wire about the other tack. Now with a piece of candlewick about ten inches long, and some water in the glass, my fountain was complete. I soaked the wick in water; strung about three inches of it along in front of the entrance, and about half an inch therefrom, stuffed the other end of the wick down into the glass. We filled the glass with water. My bees did not go further than that absorbing candlewick all day. I will not leave them without it again.

Emsworth, Pa. Geo. W. Guthrie.

* * *

Steady Cold Much Easier on the Bees

About October 1 we have our first showers, enough to stop the honey-flow. We generally still have bright sunshiny days, however, with the result that the bees fly practically every day of the winter. Colonies that went into the hives the first of October (one can not call it winter), with a hive full of bees and honey are reduced in the spring to a handful of bees, and with the stores almost all used up.

While eastern beekeepers, no doubt, envy their western brothers with their mild winters, if they only knew what these winters mean they would be thanking their stars that they aren't cursed with them. Winters that are stormy from October until March the bees come thru with practically no loss, as they are never excessively cold, and the bees stay inside and are waiting to go to work when the first flowers begin to bloom. They use little honey such winters.

Lemoore, Cal. W. J. Hickey.

* * *

White Sweet Clover in Full Bloom the First Year Sown

In the Dec. 15th issue on page 1188 I notice an article by Mr. C. W. Riggs regarding melilotus alba blooming the first year. I have had only one year's experience with it, and that was in 1915 when in April I sowed a small patch just to see how it would do in my locality. I kept it moist with a garden hose as there was no rain for a time. It came up nicely and grew rapidly; and when about four feet high, about the first week in July, it began to bloom and kept growing higher and sending out new buds and bloom. I went away Aug. 4, and a few days before going I took an 8-foot rule and measured a number of the stalks. The tallest measured 9 ft. 8 inches and it was still growing when I left. Several other stalks went 8 ft. and 7 ft. 6 in., and from that down to three feet. Some of the stems were almost half an inch in diameter at the base. When I returned the latter part of September it had seeded and most of it was down. My bees were very busy on it every day while it bloomed. I got the seed from a local seed house and it was the white variety, very sweet-scented.

I allowed some of the volunteer plants to remain last year. They came up in the spring but grew slowly, did not grow more

HEADS OF GRAIN FROM DIFFERENT FIELDS

than 3 ft. high, and did not bloom. Last season was very cool and this may account for it. I shall try another lot this year and see if it will do as well as the first.

Milbrae, Cal. W. O. Graeber.

* * *

Dandelion Yields Considerable Honey After All The statement made in your interesting article on the dandelion in the April issue of Gleanings, that it yields little or no honey, does not apply to a large part of the interior of Canada. On many farms in Ontario and Quebec, dandelion produces more honey in spring than any other plant. At Ottawa it is usually in bloom during the last two weeks in May; and if there is then a period of fine warm weather a strong colony will place 30 or 40 pounds of dandelion honey in the super. On May 29, 1916, there was a gain of 9 pounds 12 ounces for the 24 hours, by a colony on scales at the Experimental Farm, mainly from dandelion. This was the warmest day of the month—temperature 75 degrees at noon—and it followed heavy rain on the 16th, 17th, and 23d.

Like many other honey-plants the dandelion seems to secrete most nectar on warm sunny days while the plants are deriving abundant moisture from the ground, and in the dandelion the bees can reach the nectar only when it is secreted in such abundance that it wells up to near the mouth of the tubular petals. Probably the reason why dandelion produces more honey at Ottawa than at Medina is that it cannot begin to grow until our severe winter weather ceases, about mid April; and by the time it is in flower we often get summer heat, the sodden ground from the melting snow and frequent showers having meanwhile produced an extraordinary growth. Our long days, too, may be helpful, for the dandelion flower closes about noon.

Dandelion is also reported as a source of surplus honey from near Fort William; and on May 23, 1915, I found the vacant lots in Calgary, Alberta, to be a golden glow of dandelion bloom, the tubes filled to the brim with glistening nectar, this being a warm sunny day after a recent rainy period; but no bees of any sort were on it, and honeybees could hardly be accused of spreading it here. At White River, Ont., a divisional point on the Canadian Pacific Railway in the heart of an unsettled country to the north of Lake Superior, dandelions are already abundant, but no bees are kept there. Indeed, the only place in which no dandelions could be found that spring between Ottawa and the Pacific Ocean was Glacier, B. C., at an altitude of 4095 feet in the Selkirk Range of the Rocky Mountains. The manageress of the C. P. R. hotel here is proud of the fact that its lawns contain not a single dandelion.

Dandelion honey is of a bright-yellow color, and has a coarse granulation. It possesses a strong aroma and flavor corresponding to the somewhat pungent fragrance of the dandelion flower, carrying a medicinal value, real or fancied. F. W. L. Sladen,

Ottawa, Can. Apiarist,
Dominion Experimental Farms.

* * *

The Amount of Water Taken Daily in a 25-Colony Apiary Up to about two years ago the bees during the brooding season came to an outdoor kitchen pump for water. At that time they became somewhat of a nuisance, so I got a hand basin holding about a gallon of water, filled it, and put pieces of half-inch pine board floating on top for the bees to take the water from. I sprayed the pump platform with a disinfectant, and soon had the bees trained to get water at the basin. Then I gradually moved the basin nearer the bee-yard until now it is about a rod distant from the nearest hive, in the shade of a mulberry-tree.

In replenishing the water I noticed what seemed to me an extraordinary amount used, the bees constantly coming and going, so I made a little observation and tried to make a rough estimate of the water carried away. I counted the bees that were drinking at various times during different hours of several days, and found that there were an average of about sixty bees there at all times, from about six o'clock in the morning until seven at night—a few coming as early as four in the morning, and some as late as eight o'clock at night. There was no difficulty in timing them, as they came direct, loaded up, and were gone; and a good many I timed made an average of about one minute that each bee spent at the basin. In twelve hours there would be 40,200 bees visit the basin; and by weighing the water I found that the average amount that it took daily to keep the basin filled was 56 ounces—that is, that the bees carried away a pound of water in approximately 12,000 loads.

There were 25 hives in the yard at the time the observation was made, July 1 to 8, and the nearest dependable water is half a mile distant at the shore of Black Lake. There are three other pumps within a distance of ten to twenty rods from the bee-yard, but the bees got very little water at any place other than from this regular basin.

I have some curiosity to know whether the result of these observations agrees with those made by others, both as to the amount carried by the individual bee, as well as the total amount used by the swarms, as the latter seemed to me small—only about two

HEADS OF GRAIN FROM DIFFERENT FIELDS

ounces per day to each swarm, tho there were some swarms not brooding, and probably, therefore, having very little water brought to the hive.

Holland, Mich., July 10. David Huber.

* * *

The Difference in Conditions as to Natural Swarming In California natural swarming does not pay (Chadwick, page 124, February). The bees are worked for honey, I suppose, and near the close of the season the colonies are divided to make increase.

In New York the bees are divided to prevent increase—this at the beginning of the season. This may be done by actual dividing, by shaking, or by gradual withdrawing of brood-combs and starting nuclei with them. We have not yet discovered any plan that will prevent swarming when producing comb honey without meddling more or less with the brood-chamber. If we succeed in coming thru the honey season without swarming we surely would not make increase at that time.

Naples, N. Y. F. Greiner.

* * *

Why Did the Bees Build Queen-cells? The weather all thru March has been stormy, cold, backward, and with but few days when bees could fly. The 24th was fairly warm, and in the afternoon bees were flying fine. This was a good time for a spring examination, and in looking thru we found as follows:

Hive 27, 10 frames, 5 containing eggs and brood in all stages; many young bees already hatched, stores none too heavy. We found a queen-cell nearly sealed, also two other cells with larvae about three days old; no drones in sight, queen a dandy. We refer this to you and other experts.

Portland, Ore. E. J. Ladd.

[The queen you refer to, altho apparently a "dandy," and having a sufficient amount of brood for the time of the year and the number of bees she had, is probably failing. Very often a queen will fail this way when there is no outward evidence that she is going to play out. We do not know how to explain it in any other way unless we offer the suggestion that sometimes bees will break all rules and for no apparent reason. If the queen herself is really a dandy, as you say, and all right in every respect, then there is no reason at the time named why the bees should start raising cells; and even if they did so, a good queen ought to tear them down. The fact that this queen failed to do so, probably points to the fact that she is failing. We suggest that you let the colony go on, and watch developments. In all probability a young queen will hatch from one of the cells, and then mother and daughter will both lay along side by side. After a while the old queen will disappear, leaving the young one in complete possession of the hive.—Ed.]

* * *

Bees Necessary Also in an Almond Grove I have read articles in Gleanings at different times in regard to bees helping to produce big fruit crops. Here is my experience in that line.

I live in the best almond belt in California. Last February and March, during the blooming season, we had some very rainy weather. I had eight colonies of bees in a five-acre orchard; and every time the rain let up the orchard sounded like it too. As a result, we harvested about 9500 lbs. almonds on the five acres—nearly a ton per acre, while the other orchards in the district averaged only about 300 lbs. per acre, and some not even that much. The result of the bees' work also showed up in parts of adjoining orchards nearest to us. A good many orchardmen were so strongly convinced of the good work of the bees that I could have placed 200 or more colonies in orchards at my own figure. I was sorry that I couldn't make that increase, but was glad to increase them to 24 colonies.

Dunham, Cal. Otto Reimer.

* * *

A Plan for Swarm Control Some say that placing the queen below an excluder on drawn combs or foundation and the brood above it, will prevent swarming to some extent and that queen-cells built above do not alter the result.

Can better results be obtained by putting a super of empty combs between the two bodies above the excluder?

If queen-cells are not removed in either case, will it induce swarming?

Hurley, S. D. Menholt Christensen.

A. The plan proposed in second paragraph, of putting drawn combs or foundation with queen below an excluder and brood above, will discourage swarming, but not necessarily stop it. In some cases it may prove to be an utter failure, depending somewhat upon the character of the honey-flow and the bees. It would help some to put a super of empty comb between the two bodies above; but it might be too much of a good thing. To be on the safer side it would be wise to keep the queen-cells cut out every eighth day, altho those in the second story will have less effect upon the swarming than those in the lower story where the queen is.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Management for Swarm-control in Comb Honey Production

We clip our queens at the time of the fruit blossoms, and give an extra story of extracting-frames to hold back swarming. When the flow of white-clover honey comes we ''shake'' colonies preparing to swarm or let them swarm; cage the queen found before the hive, and place the cage in the entrance on the bottom-board.

When the bees return, or several days later if we do not have the time, we move the colony to be ''shaken'' from its stand, and place an empty hive-body with the bottom-board on the stand. We take the two outside combs from the old colony, containing mostly pollen and honey, and put them in the empty hive-body. Between them we place four frames of full sheets of wired foundation. Four dummies (boards the size of frames) complete the brood-chamber. Over this we place a queen-excluder, and on it set one or more supers of sections with ''baits'' in one super. We shake the bees from the eight remaining frames, hive-body, and bottom-boards, before this prepared hive, letting the queen run in with the bees, and then place the eight frames of brood over a weak colony to be run for extracting, cutting out the queen-cells, and, six days later, cutting cells again.

By this method we get four frames built, all worker cells; all the honey is forced above, and the pollen is deposited below. The bees do not make any preparations to swarm again until the late flow of honey. After the honey-flow we give them four frames of honey in place of dummies, and this stimulates the queen to lay for late honey-flow, and to build up with young bees for winter.

Brownstown, Ind. D. F. Rankin.

Jimmy Peachbud says in all his experience, and he has handled hybrids, blacks, yellow jackets and hornets, that he never got stung as bad as he did the time he traded a hive of Italians for a poodle pup.

OUR HOMES

A. I. ROOT

Lord, that I might receive my sight.—MARK 10:51.

One thing I know, that, whereas I was blind, now I see.—JOHN 9:25.

If ye were blind, ye should have no sin; but now ye say, We see; therefore your sin remaineth.—JOHN 9:41.

TWICE in my seventy-seven years of life I have been blind—first when a schoolboy of about 14. Some kind of inflammation set in, and my eyes were swollen shut for two or three days. During that time (as I with my peculiar temperament must be doing *something*) I learned to play the then popular melodies on my aunt's little French accordion. A short time ago, when I happened to get hold of an accordion, to my surprise I found that, altho 60 years had passed, I could still play, after a fashion, the most of those old tunes. I think "Sweet Home," just then comparatively new, was my especial favorite.

Well, the accordion was an innocent amusement. It did not harm any one unless it was the good aunt, and *she* doubtless was pleased at my proficiency, as she was my teacher.

My second period of blindness, instead of two or three days was (I am ashamed to say) for several *years,* and, worse still, after I was a grown-up man. There is an old hymn that has the stanza—

The heathen in their blindness
Bow down to wood and stone.

To tell the plain truth I was *blind* because I was a "heathen," or something worse. I was selfish, and recognized no god but self. In Pilgrim's Progress we are told that after Christian had gone quite a little way out of the "narrow path" he had glimpses of a great overhanging rock, and from this rock now and then flashes of fire blazed forth, and he finally became alarmed, fearing the rock might fall down on his head. I too had occasional glimpses of that flaming rock, and resolved again and again I would get back into the *manly* path and *stay there;* but the "forbidden path" always had some new allurement, and you know I have always been curious about new things to be explored. I was, however, getting to be more and more unhappy. Conscience was at times getting to be a fearful load, like that of poor Christian in the story. One day I was so unhappy I went off by myself in the woods. I sat down on a log and thought it over. I decided I must break away from Satan altho I didn't call him Satan *just then.* I finally rose up, raised my hand, and called God to witness my decision that *hereafter* I would be a *man* and no slave to any *thing* nor to any *body.* I, with head up and shoulders thrown back, marched home, feeling proud that I *was* a man *once more.* I said, "marched home;" but before I *reached* home Satan tripped me up and twisted me around his thumb until I felt like a whipped puppy, and was too discouraged to think of ever trying again.

But a crisis was coming—I felt it and knew it.* One night after closing my store (I was a jeweler at the time) I knelt down in the darkness and uttered a prayer beginning something like this: "O God, if there be a God, have mercy on me a sinner."

I don't know that I expected any answer; but I was in trouble, and decided to see if prayer would "do any good." It did "do good" at once. A voice, or perhaps I should say a suggestion, came to me something as Jesus said to the blind man: "What wilt thou that I should do unto thee?" I replied in my prayer: "Lord, give me back the innocency of childhood—the honest, every-day happiness I always had before I became a man."

Perhaps I had in mind the lines, comparatively new at the time:

Backward, turn backward,
O time, in thy flight;
Make me a child again
Just for tonight.

Again the voice came, asking what price I was willing to pay—how much I would surrender for this peace of mind I seemed to covet; but before I made answer, something impelled me to make a mental inventory of my present life. A revival was going on in our town, and they were holding union meetings in the different churches. I had never attended, and had even advised against them. I held back; but the old life loomed up again. Little by little I yielded until I was ready to say, "*All* to leave and follow thee."

As I started to go home a new world opened up before me, and, furthermore, a new *A. I. Root* was ushered into the world. I didn't worry any more about Satan "tripping me up," for it was no more the old

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* The accordion was an innocent and harmless amusement—not so the other.

"A. I. R.," but the *Lord Jesus Christ* he would have to deal with. It was one of my "happy surprises" that the strong arm that never fails was always at hand so long as I let *him* take the lead.*

Now just a word about the "blindness" part. A little time before what I have just been telling you I was one day compelled to ride several hours in the caboose of a slow freight train. All I could find to read was a copy of the Bible and a medicine almanac. I first read one and then the other. I tried in vain to find something in the Bible that interested me, and I was, in one sense, honest in so reporting when I got home. I was *blind* to Bible truths and teachings, because I did not propose to obey its teachings.

After that prayer I have told you about I hurried home and hunted up the unused Bible. I wanted to know all about the new life that had opened up before me, and no other book in the whole wide world could unfold it. Do you wonder that I found it sparkling with new and precious truths? From that day to this every little while some Bible text stands out sharp and clear as if it were written across the sky, and I wonder I had never noticed its beauty before. Let me give you an illustration.

A few days ago some business matters required me to be some hours with people who smoked cigarettes, used bad talk, and were ungodly all around. After I left I was thinking that the experience made me love good Christian people more than I ever did before; and then all at once the beautiful text shone out sharp and clear, "Blessed are they who do *hunger* and *thirst* after righteousness." Just think of the expression, "hunger and thirst." There are many people who do "about right" in a lazy sort of way, and give little or no thought to it; but how many are there who really go thru the world *hungering* and *thirsting* after *right doing?* Last evening in prayer-meeting I asked if all in that great roomful of people were hungering and thirsting in this way. And now I want to ask all the good people who read these Home papers, are *you,* my friend, following the dear Saviour in this hungering and thirsting? If the great wide world that seems just now hungering for war were hungering for righteousness, how long would the war last?

May God in his infinite love bless this message to a world groping in spiritual blindness.

When out in the woods as narrated, I stood up, raised my hand, and called on God to "witness" what *I* was going to do. When I with bowed head acknowledged myself a helpless (and hopeless) *sinner* I was the *witness,* while God did the work of opening my blind eyes and revealing the *new world* that all at once opened up before me.

One thing I know, that I am he
Who once was blind and now I see.

"THE LAMB OF GOD THAT TAKETH AWAY THE SIN OF THE WORLD."

In my writeup of my visit to the great Ford factory in Detroit a few months ago I suggested, at the close, in speaking of Ford's reform work, that possibly Ford *was* a Christian *but didn't know it.* Having this in mind you may be sure I read over and over the clipping below from the *Sunday School Times,* for the lesson of Jan. 14.

> A man known thruout America for his work with the honor system in reforming prison criminals recently made three interesting statements, according to a newspaper account. "I am still convinced that there are no bad men in the world; I am sure that my method is right," he said. Asked whether a certain notorious criminal, then under sentence of death, having confessed to murdering his wife's parents, could be redeemed, "No," was the reply, "but that means nothing . . . he is not even a type."
>
> There are three mistakes in these three statements.
>
> First, it is not true that "there are no bad men in the world," for there is no other kind than bad men. "There is none righteous, no, not one" (Rom. 3:10). "For all have sinned, and come short of the glory of God" (Rom. 3:23).
>
> Second, a man like that murderer *can* be redeemed. "For God so loved the world, that he gave his only begotten Son, that whosoever believeth on him should not perish, but have eternal life" (John 3:16). "The law of the Spirit of life in Christ Jesus made me free from the law of sin and death" (Rom. 8:2).
>
> Third, that murderer *is* a type of the logical outworking of the sin that is in every man. "There is a way which seemeth right unto a man; but the end thereof are the ways of death" (Prov. 14:12).
>
> The sincere but mistaken reformer's statements were made without recognition of the central truth in to-day's lesson: the Lamb of God. He overlooked every man's sin, every man's need of the Lamb of God, and the infinite sufficiency of the Lamb of God to meet every man's need.
>
> Charles Gallaudet Trumbull.

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* How did it affect business? Here is a sample: Next morning I recalled that the other jeweler in town and I had been paying 20 cts. a line to advertise how much better our own store was compared with our competitor, etc. I went up to his place the very first thing and said:

"Mr. W., I have started out to be a Christian; and if you will forgive me for the past I will try to be a friend of yours instead of an enemy."

Before long I had a chance to "prove out." A lady wanted quite an expensive article, but she said she liked rather better the one Mr. W. had than mine, and asked me if I thought his just as good quality, etc. She told him what I said, and bought of him; and this thing went on, for I always spoke well of my rival. Did I suffer by it? Bless you, no. The outcome was that he came to me one day and said, "Mr. Root, if what you have done for me is *Christianity,* I *too* want to be a Christian;" and it was my great pleasure to lead *him* to "the Lamb of God that taketh away the sin of the world."

HIGH-PRESSURE GARDENING

"POTATO-PLANTS" AS WELL AS CABBAGE AND TOMATO PLANTS—WHY NOT?

After my two articles on "high-pressure" potatoes (see p. 145, February, 217, March) I sent clippings of both to our Florida and Ohio experiment stations. Neither station seemed to think *very much* of my suggestions (and demonstration) in the way of giving a "hungry world" potatoes once more. Neither seemed to "catch on," or at least it looks so to me.

Let me try again. All authorities seem to agree that in cutting seed potatoes we should give to each sprouted piece a fairly good-sized chunk of potato. This is to furnish fertility to the little plant as it starts out. It is like the yolk of the egg to the newly hatched chick. Below is what the Kilgore seed catalog says:

> In cutting the seed be sure to leave from one to two good eyes and a good-sized piece of the meat, not merely a piece of the potato skin. By careful observation we have found that by leaving a good deal of the potato with the eye a much stronger and more vigorous plant will be secured.

Now, friends, look here. At this date (March 20) old potatoes are selling for *a dollar* a peck for table use. Seed potatoes to plant are probably higher still. Now, what kind of economy is it to use potatoes at these prices for a *fertilizer* for the young plant? In the *Rural New-Yorker* for March 10 they seem to be "coming my way" a little, but evidently don't know it. This is what they say in discussing potatoes:

> On garden scale they may be started in flats and the plants transplanted like tomatoes.

Exactly; and when you prepare the soil for those "flats," make it half or more old well-rotted stable manure.* Potatoes will stand richer soil than almost anything else; and when you take up a plant the great abundance of fibrous roots are just determined not to "let go" of this fertile soil that just suits them—quite a contrast to either cabbage or tomato plants.† Once more: After you have cut out several sprouts, with clinging roots, from a large potato, put it back in the hot-bed or cold-frame and you will get another lot a little later, just as good as the first. Still again: When the freeze came, I had some nice potato-plants in the cold-frame; and as soon as things "let up," out they went where potatoes had been just dug. Do you know what happened? Yesterday I asked our grocer what he could give for some new potatoes. "New potatoes?" said he, "why, you can almost set your own price. Old potatoes are a dollar a peck, and there are no *new* ones, that I know of, in all this region." You see there has been no time to grow them since the freeze, except by "my invention." Do you say just now things are unusual? For years past something similar has occurred all over our nation just as new potatoes began to appear. Florida new potatoes were 70 cts. a peck in Medina, Ohio, just about a year ago.

When I introduced the Grand Rapids lettuce, years ago, and gave it its name, and sent seed to our readers, I predicted a great industry for it. People laughed at my enthusiasm and said, "Who wants *lettuce* in *winter time?*" etc. And this reminds me to suggest to the owners of lettuce greenhouses that now cover *acres*, wouldn't *potatoes* under glass *just now* pay better than lettuce? Here is what our Ohio Station says:

> *Mr. Root*:—Your letter and clipping of the 16th has been referred to me for reply. In view of the remarkable shortage of seed potatoes in Ohio, and the probable high prices for early potatoes, we are recommending that greatest care be taken with the seed and in growing. Few gardeners will go to the pains that you have, but doubtless it would pay this season. Our "sun-sprouting" described on enclosed reprint gives somewhat similar results, and is thoroly practical. The old scheme of cutting out the eyes, or using parings, leaving the rest for eating, might almost be justified under present conditions.
>
> S. N. GREEN,
> Wooster, Ohio, Feb. 21. Garden Assistant.

"TRANSPLANTING IRISH POTATOES."

The *Rural New-Yorker* seems to "catch on" to my "invention" (?) even if the experiment stations do not. See the following from the March 24th issue:

> Some one asks if it is possible to transplant potato-plants like cabbage or tomatoes. Surely—we have often done it. In a season like this you can cut off the "seed end" (which is where the sprouts grow) as the potatoes are prepared for cooking. This seed end may be planted in pots or boxes or in the greenhouse. They make strong plants as a rule; and when the weather suits these can be planted outdoors. We have done this several times with fair success. The plan is to put them in deep furrows. In case of a frost the soil may be hoed or plowed up over them for protection, and raked off when danger is past. You gain ten days or so with the crop by doing this. Some market gardeners practice this on a large scale, but it will not pay unless labor is cheap.

Today, March 27, we commence selling new potatoes once more since the freeze—

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* Here is something more clipped from the *Rural*: "Good chicken manure will give great results on potatoes when used in addition to the chemicals. When dropped on the hill after planting, and well worked into the ground, it surely does make the potato vines lay."

† Potato-plants are easiest plants in the world to make grow. No failures and no missing hills.

firsts, $1.00 a peck; seconds, half price; sold in new half-peck baskets.

DASHEENS AS A SUBSTITUTE FOR THE POTATO.

We clip the following from the *Toledo Blade*:

> DASHEENS, RIVALS OF SPUD, TO BE SOLD HERE; GOVERNMENT EXPERT HERE TO LECTURE ON PLANT.
>
> Arrangements to place dasheens on the Toledo market are in progress.
>
> Robert A. Young, of the government Bureau of Plant Industry, will lecture Thursday night in the council chamber on the dasheen. The lecture will be under the auspices of the Housewives' League. The league urges substitution of the dasheen for high-priced potatoes. The dasheen cannot be grown further north than South Carolina. The present market price is 10 to 15 cents a pound. It is asserted the food value is 50 per cent greater than that of the potato, and that its uses are much more diversified.

Here in Florida they retail at 5 cts. per lb., and by the bushel at about 3 cts. Perhaps they do not as a rule reach *full maturity* further north than South Carolina; but I have now grown them for three summers in Ohio, with no trouble at all.

DASHEEN STAND THE WINTER IN OPEN GROUND IN VIRGINIA.

> *Mr. Root*:—I write to inform you that my dasheens, left in the ground, survived the severe exposure of this severest winter of many years. We are located in central Virginia, and the knowledge of this hardihood of the dasheen may prove an incentive to extend the cultivation of this valuable vegetable in more northern latitudes than now usually grown.
>
> Bees have wintered well, and are in good condition —are strong with ample stores.
>
> Prospects for a good season were never better at this date in March. B. F. AVERILL.
>
> Howardsville, Va., March 14.

The above is a valuable report. We have always dug them in Ohio when frost killed the tops. They might winter there with straw mulch as protection. Here in Florida, when killed down by the recent freeze they were up again with great green leaves before almost anything else. As there are many inquiries coming, I take the liberty of copying the following advertisement from the *Florida Grower* for March 10.

> LOOK! LISTEN!—Why pay such high prices for white potatoes? Order your supply of dasheens now. Ask those who have tried them if they are not good at $2 bushel. The R. W. Harper Co., The Dasheen Men, Montverde, Fla.

FAKE STORIES IN REGARD TO AGRICULTURE, POULTRY BUSINESS, AND BEEKEEPING.

The older readers of GLEANINGS will remember how hard it once was to convince people that comb honey was not made in a factory out of paraffine and glucose. About the same time a yarn was started about artificial hens' eggs, and a good many believed it was possible. Since then other fakes have come up. Just a few days ago there was a statement in the *Scientific American* to the effect that sweetened water could be fed to a pumpkin-vine so as to grow enormous pumpkins; and two photographs were given to show how it was done. The pumpkin-vine was split, and a lampwick pulled thru it. Then the ends of the lampwick rested in dishes of sweetened water; and the statement was made in good faith that the vine would suck up the sweetened water and form pumpkins of enormous size. The incident recalled something I read years ago in some agricultural paper that pumpkins and squashes would take up *milk* in a similar way; and as my good friend Collinwood, of the *Rural New-Yorker*, is pretty well posted in all these things I submitted the page containing the account of it from the *Scientific American*. Below is his reply. It is rather long, I know, and evidently was not intended for publication; but the story gives such a vivid glimpse of our good friend Collinwood, and besides contains some wholesome morals, that I give the letter entire:

> *Dear Mr. Root*:—I am very much pleased to hear from you again, and very glad to answer your question as best I can about this so-called scientific stuff. I believe the whole thing is a humbug, and I don't believe there is anything to it whatever. I am afraid that I am in a way responsible for this, and I will explain why I think so.
>
> Some years ago, when I was younger than I am now, I used to try to write poetry now and then. It was wrong, I know, and I should have known better, but I am afraid I got started in writing stanzas to a certain young woman who was a very practical character, and quite unmoved, apparently, by my poetry. At any rate, the Muse took me by the ear and walked me off in a corner and started me at writing verses. Having fallen into the habit of it I kept it up, and, running a little short of facts now and then, I drew from the bank of imagination. I remember two poems, so called, which I wrote while I was working on a farm paper in the South, trying to boom the dairy business. One was about a frog that fell into a churn. There was cream in the churn, but the farmer's daughter, who was supposed to churn the butter, had probably gone off skylarking somewhere and left the job for mother. This frog found himself swimming in the cream. Many a man would have given up, opened his mouth, swallowed the cream until he was so heavy he could not float, and then gone down for the last time. This frog probably had ancestors who came from Cape Cod, and he was naturally a kicker, so he made up his mind that he would try a few kicks anyway before he went down. He kept on swimming and kicking until he churned the cream into a lump; and when the lazy dairy-maid came back there was a great lump of golden butter in the churn, with the frog sitting on top picking his teeth with his hind foot. The moral of this was, "keep kicking."
>
> The other poem was written about a lazy man who did not like to churn, so he just set his milk in the pans, put them out under the tree, and went to sleep. There was a pumpkin-vine growing around the house, and, attracted by the milk, it

grew and threw out a couple of tendrils into the pan and sucked up all the milk. When the man woke up he accused the hired man of drinking the milk; but a little later, when they came to take the pumpkin off the vine and open it, they found 3 lbs. of butter inside the pumpkin where it had absorbed the milk.

I made a larger hit with that poem than I have ever done with anything else, and for a time the papers were well filled up with stories about it. One man said he was going to get out a new variety of the pumpkin, which would take care of milk and cream and turn it into butter without the need of any churn or separator. Others told all sorts of stories. One man was going to try the same thing with whisky. In a wet state he was going to feed the pumpkins and watermelons on liquor, and then sell them to go into prohibition territories, where all you had to do was to cut the melon open and find a bottle of fine liquor inside. This I think was what started all these fool stories about feeding sugar and other materials to pumpkins and melons, and having them absorb it. The proposition has apparently gone all over the country, and into all sorts of papers, wherever there are people foolish enough to want this kind of sensation. I don't think this game of feeding sugar to a pumpkin in this way is a bit more sensible than the story the man told me in Colorado.

He said that they had never had any use for their stable manure, so they threw it out of the windows until the manure pile got larger than the barn. Now he found that he must move one or the other, and he hated to do it. Finally he dropped by mistake some pumpkin seed on the manure-pile. Of course in such a situation the vines made a rampant growth. They were very strong; and, as the story goes, the vines grew around that barn, lifted it up, and carried it five rods away from the manure-pile into a new place. That did the work for the farmer, and proved to him the great value of stable manure.

Now, in my judgment that story is just as plausible and just as probable as this proposition of feeding stuff to a pumpkin, as these articles mention. I believe there is nothing to it, and I agree with you that it is a shame that some of these prominent papers should give space to the matter.

I am sorry to bother you with this long letter, but I got going and talked it off.

New York, Sept. 23. H. W. Collingwood.

Several things impressed me in reading the above story, particularly the fact that friend Collinwood has (like myself) a good wife to throw cold water on some of his hobbies when it seems to be needed. Another is, to be a little careful that somebody in this great wide world does not take for *fact* something you intended only for pleasantry or as a joke.*

THE NEW DIXIE HIGHWAY IN FLORIDA.

The feat performed a few days ago by the drivers of a Maxwell car in covering the East Coast section of the Dixie highway from Jacksonville to Miami, a distance of 376 miles, in 9 hours and 3 minutes, indicates that road conditions have greatly improved, and that the dream of a perfectly paved roadway is about to be realized.—*Tallahassee Democrat.*

The above indicates at least three things, if not more. First, the Dixie highway here in Florida must be in pretty fair shape; second, the Maxwell car seems to be still holding its well-earned reputation; third, we have drivers who can make a speed of over 40 miles an hour, and keep it up on an average for close to *400 miles on a stretch.* Does this not beat the average locomotive?

POULTRY NEWS

RAISING CHICKENS IN FLORIDA; ALSO SOMETHING ABOUT "THE HIGH COST OF" —CHICKEN FEED.

On p. 219, March, I told you about getting only 18 chicks from six dozen eggs, etc. Well, next time I got 59 fertile eggs from 60; but as some of the 60 were toward a month old (as I had only six laying pullets to furnish them, and they had just been thru the "smash up" by express), I got only 48 chicks from the 59 fertile eggs. They were taken out of the incubator right during the great Florida freeze; and the brooder stove I have mentioned *just hit the spot.* You may recall that I have often said no artificial heat is needed for chicks from an incubator down here in Florida, in my opinion. Well, my neighbor Abbott, who raises chicks by the thousand, has never agreed with me; and since using the stove brooder I have changed *my* opinion. If I am right, it has *already* made a revolution in growing chicks. It is even better than the *mother hen.* When we have several days of cold rainy weather in succession the hen is compelled to brood the chicks so constantly they get little or no exercise. Again, there are hens that neglect to brood the chicks when they need brooding, or when especial weak chicks want brooding.

Well, days when there was ice in the drinking-dishes almost all day long, and fierce north winds, the chicks around that brooder stove just flopped their little wings and chased all over that 8 x 8 room with the brooder stove in the center. If any chick felt chilly it just went up near the stove; and if others were too warm they went off into the corners of the room. At night they made a circle clear around the stove, and stretched themselves out on the warm sand that forms the floor of the brooder-house. Not one of the 48 has shown any symptom of any trouble. Thirty-two hatched under three hens a little later were put with them, and not one of the 32 has been lost. As we had only about ten days of the "cold wave," the stove was used only about that long; and, by the way, this stove brooder is not an entirely *new* idea after all. Mrs. Jennie Reed, of Holland, Mich. (who afterward became my brother's wife), raised chickens years ago in the winter by having a coal-stove in the center of a room having only a ground floor, and she made quite a success of it. Of course she did not have the large galvanized hover to deflect the heat down on the backs of the chicks, saving fuel and making the stove much more effective.

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* Some years ago the *Scientific American* printed in good faith some fake potatoes as large as flour-sacks which men were carrying on their shoulders. The editor said afterward that he had been "come over."

Now a word about the "high cost of" chicken feed down here in Florida. Corn is $2.60 a hundred; "chick feed" containing a very *little* poor wheat, $2.75; and other grain in proportion. Wheat is not on sale at any price. The chickens, old and young, "got tired" of corn, and begged for something else. When the freeze came we had quite a lot of potatoes almost ready to dig. Some that were only a few inches high started up again; but a lot had to be dug, even if they were only about the size of marbles. When not too small we baked them in a wire-cloth pan, as I explained a year ago; but the rest were boiled for the chickens. A visitor said such new potatoes as we were giving the chicks were selling in St. Petersburg at 15 *cts. a quart berry-basket* full. Well, the chickens, old and young, liked the potatoes when made into a mash with middlings, and it started the Rhode Island Reds to laying that had been "loafing" all winter; but the potatoes gave out after I had sold about ten bushels at $3.20, and there were no more for the chickens. I had been trying to make them eat more cassava, giving it to them just as dug; but they didn't seem to care for it. I think I told you last year about getting a cheap root-cutter to grind up the cassava. Well, when the potatoes were gone I tried pouring boiling water on a pail of ground cassava roots, chopping them up and then stirring in enough middlings to make a mash and the whole tribe are now calling for it every day. The hens are laying fine, and the little chicks are satisfied and happy, and the corn is comparatively untouched. As the cassava here grows almost of itself, even on unfertilized ground, its cost is only trifling. By the way, you may care to know that I sent a root of cassava to the recent State Fair at Tampa, and got the first premium. I regret I forgot to weigh the big root; but I remember it was almost all I wanted to carry. It was as big as my leg (pants and all), and almost as long. On p. 282, March 15, 1916, you can see a picture of some of the cassava roots.

Now, cassava is not only a good food for chickens but is good for people, and furnishes the tapioca of commerce. Who knows but that it may help to reduce "the high cost of living" all around when potatoes threaten to be $5.00 *a bushel?*

FOR A. I. ROOT ON THE MILK-GOAT QUESTION.

About two years ago I got interested in the milk-goat question. I did a great deal of looking around before I found where to buy one or two. I finally found them and bought two. They came fresh last spring in April. One of these goats is a half-blood Toggenburg. The other is a scrub, I think. The man I bought her from said she was a Spanish Maltese. She looks more scrub than anything else to me. The grade Toggenburg gave three quarts of milk till along in August when she dropped to about two quarts, which she is still giving now, Nov. 11. The scrub gave, when fresh, a little over a quart per day at first, then dropped to about three-fourths of a quart which she still gives. The milk from the Toggenburg grade tests three and nine-tenths butter fat, while the scrub's milk tests four and nine-tenths. The milk is as good as any milk I ever tasted, and I think a little better than cows' milk. There is absolutely no difference in the taste of goats' milk and cows' milk that I can detect—no goat taste whatever. It agrees with me much better than does cows' milk. It has no tendency to make me costive as does cows' milk. I have not yet detected the least goat odor from the does, and I now have five. The buck I have is a young fellow; and as now is the rutting season he has the goat odor, but not very strong. It likely will get stronger with age. Out of the rutting season I have found little if any odor on the buck, and none at all on the does at any time. I am getting to be enthusiastic on the milk-goat question. I have found two publications published in the interests of milk-goat breeders. I learn there are thousands of them on the Pacific coast. There they sell goats' milk at 25 cents per quart, and cheese up to $1 per pound, and seem to find all the market they need. I also found that a pure-bred milk goat of any breed was hard to buy and very high in price. I have been trying to buy a pure-bred female. They have been priced to me from $75 for a spring kid up to $200 for a doe three years old. A pure-bred buck can be had at a much lower price. I have the buck, and intend having the doe. Good grades that will give two to four quarts of milk can be bought for $20 to $50. It looks to me like a nice side line for a beeman. I have a little land, 5½ acres. It costs little to keep a goat or two. Eight can be kept with the same money that one cow can be kept. They are pleasant to have around. They are great pets, and very intelligent. I believe the milk to be very beneficial to me, and I enjoy the goats themselves. I intend giving them a good trial any way.

Pure-bred and nearly pure Toggenburgs have given more than 6 quarts per day.

Sabetha, Kan. Frank Hill.

TEMPERANCE

"AND GOD SAID, LET US MAKE MAN IN OUR IMAGE."

Our churches in Bradentown, Fla., have an excellent custom of holding union temperance meetings about once a month, and it often fills our largest churches to overflowing. I was so much impressed with the following from one of our able attorneys, Mr. G. P. Smythe, that I persuaded him to give it to me. Please notice particularly his concluding summing up.

THORO PREPAREDNESS.

We have recently heard a great deal about preparedness. During the late national campaign the various candidates for office were falling over each other to get to the front seat on the preparedness band-wagon. The candidates of the two old parties spent much time and energy in telling the people how important and necessary it is to be prepared for war. Some outlined their plans for preparedness, including universal military training, etc. Having confidence in the wisdom and sincerity of these great men, watchfully I waited, with eager ear to the ground, hoping to hear that some one would have the foresight and moral courage to propose national prohibition as a first step toward preparedness. But I waited and listened in vain. The campaign is over, the election has passed. We are still drawing nearer the vortex of an awful war, and I haven't yet heard either of the old parties suggest prohibition as a means of preparedness. I insist we can never have thoro preparedness without national prohibition. Thoro preparedness can not precede prohibition, but must follow it; and the sooner we have prohibition, the sooner we shall be prepared and the easier it will be. This is not merely a theory, but the experience of some of the great nations of Europe.

The people of the United States pay over two billion dollars a year for liquor. Investigation shows that about three-fourths of all crime in this country is caused by strong drink. To maintain courts and prisons to try and punish these liquor-made criminals, costs at least two billion more. To maintain the inmates of almshouses, hospitals, and insane-asylums, sent there because of drink, costs a billion more. The loss of health and efficiency to labor by those who drink will run into the billions. From an economic standpoint strong drink is costing this country eight or ten billion dollars annually. We do not know how to estimate in dollars and cents the wasted tears of the innocent, the anguish of sleepless nights, the heartaches of anxious mothers, the blasted hopes and broken health of unhappy wives, the pitiful wail of hunger, nor the cries of cold, neglected children; yet these too are the natural results of the liquor-traffic.

Yes, give us national prohibition first, and, with this ten billion dollars saved annually, the first year we could put one thousand modern battle-ships on the oceans, costing ten millions each, that could overcome all the navies of the world. The second year we could build, arm, and equip a continuous chain of forts around all the border of this great country. The third year we could arm, equip, and furnish supplies to an army of ten million men—an army made up from a sober, moral, healthy citizenship, with a physical stamina for endurance and hardship, worthy of all our best American traditions. With such a navy and fortifications, and such an army, we should surely be prepared for whatever eventuality might come, and all provided by the savings of three years caused by national prohibition.

Not only should we be prepared to resist a foreign foe, but in the preparation we shall have overcome a more dangerous and deadly foe at home than any that threatens us abroad. May the God of nations save us from ourselves. We become very much alarmed over the presence in this country of a few unorganized hyphenated Americans who are loyal to some foreign power; but we ignore a powerful and well-organized enemy here in our very midst. The kingdom of Alcohol, with the powerful and well-organized forces of the liquor-traffic, wages relentless war on us day by day and year by year. It ignores our laws, it works plots, conspiracies, and treason. It violates every law of civilized warfare; it stupefies the sensibilities of our people with poisonous drugs; it murders sixty thousand of our citizens every year, and at least that many more are rendered mentally, physically, and morally deficient. It makes more widows and orphans than would the armies of any foreign foe. No preparedness is thoro that does not take into account this deadly foe within our own border.

With a preparedness founded on national prohibition, we should not only be prepared for war, but, what is better, we should be prepared for peace. With a sober, healthy, vigorous citizenship we should be prepared to vie with all the vicissitudes of life; prepared to contend better with the ever increasing cost of living; prepared to protect our homes against the summer's sun and the winter's cold; prepared to supplant poverty, misery, and woe in a million American homes with sunshine, peace, and joy; prepared to give to the mothers of this land sons worthy of their sacrifice and love; prepared to send home to the wives of this country sober, industrious, and faithful husbands; prepared to give to the fair daughters of this land young men worthy of their hand and heart; prepared to give to generations yet unborn an inheritance of brain and brawn and soul, that our children and our children's children may be true to form prescribed by Holy Writ, where it was said by the Creator, "Let us make man in our image."

Yes, first give us national prohibition as the foundation upon which to build all other plans for national preparedness."

"GOD'S KINGDOM COMING."

The following "summing up" by Dr. Frank Crane we clip from the *New York Globe*:

PROHIBITION.

It is quite probable that within a few years the manufacture and sale of alcoholic beverages will be absolutely prohibited thruout the United States.

The prohibition movement seems to be advancing with grim momentum. A majority of the states of the Union have prohibition laws. About 60,000,000 Americans live in dry territory. Eleven cities of over 100,000 population have no licensed saloons. Among these are Detroit and Seattle, with over 200,000 population each.

There are strong indications that congress will propose, for ratification by the states, a constitutional prohibition amendment. Two years ago it voted 207 to 194 in favor of it.

The movement appears to have got out of the hands of the "evangelists," and to have assumed a far more formidable aspect, because backed by scientists, officials, business men, and practical people generally.

Medical science has decided that alcohol is not a stimulant, but simply liberates the lower by stupefying the higher powers of the brain.

Insurance companies have piled up evidence showing the increased mortality of drinkers.

Experts have demonstrated the connection between alcohol and insanity, poverty, and prostitution.

Civic bodies, such as the New York Board of Health, organize definite campaigns to induce people to abstain from liquor as a matter of public health.

Literature is attacking the strong, romantic, emotional appeal of alcoholism.

Business is against liquor. The drinking man is discounted everywhere, and an increasing number of business concerns will not give employment under any circumstances to the man who drinks.

A large number of periodicals exclude liquor advertisements.

Added force is given the prohibition wave in America by the acts of Russia, France, and England during the war; all have more or less restricted alcoholism. Five provinces in Canada are dry.

It looks as if the world were rapidly making up its mind that the arch-enemy of mankind, alcohol, that has debauched the imagination and twisted the reasoning powers of the race for so many centuries, will have to go.

Curiously enough, the labor organizations, which have most to gain from universal abstinence, have done little or nothing to advance the movement.

Curiously, also, it seems to be the West and South that are threatening to impose prohibition upon the reluctant Northeast.

Robert A. Woods, in a recent article in the *Survey*, quotes a Southerner's remark, that "as the North had put abolition over on the South, now the South was going to put prohibition over on the North."

SOME KIND WORDS AND ALSO SOMETHING ABOUT A PART OF CALIFORNIA.

Brother Root:—With all the probable crooked work done in and around San Francisco at our late national election, won't you, as well as I, be very thankful that California, south of the Tehachapi, seven counties with an area exceeding the states of Ohio, Indiana, and Illinois, voted solid 6 to 1 dry? We worked night and day to bring this about; also take notice that some four other states voted dry. May God grant you the years to live to see 48 of them dry is my daily prayer. Yours truly,

Glendale, Cal., Dec. 30, 1916. G. W. BERCAW.

Do you know that GLEANINGS has been in our family for well nigh 40 years?

"STRAWS (A GREAT LOT OF THEM) SHOW THE WAY THE WIND BLOWS."

Mr. A. I. Root:—I enclose clippings from the *Milwaukee Journal*. They will show you what the anti-saloon people are doing in Milwaukee, which is, so far as I know, the last stronghold of the brewers in this country. The brewers' advertisements will show what they are expecting to happen soon.

There is a bill before the Wisconsin legislature, which provides for a vote of the people of the state in November, 1918, on the question of state-wide prohibition. I expect it to pass, and I expect the voters to vote the state dry. I suppose I have not sent all of the brewers' advertisements that the *Journal* published. They have been appearing for some weeks past, two or three times a week.

I hope you will live to see state-wide prohibition all over the Union. It is not far off.

Milwaukee, Wis. JAMES L. HOWARD.

Our friend sends with the above five double-column advertisements. One of the five has the heading:

"DESTRUCTION WITHOUT COMPENSATION IS CONFISCATION,"

and this is a fair sample of the other five.

ANOTHER STRAW.

One of our readers sends us a flaming advertising sheet sent out by a St. Louis liquor dealer which starts out as follows:

"Here is your chance to get some fine old whisky at *half price!*" Great bargain offers! Very rare and old whiskies at *half price* on account of prohibition. I don't want to get stuck! Bills now pending in Congress and in the Legislatures may stop all liquor shipments to "dry" states! This would mean that our large stock of rare and old whiskies could not be sold, and that we would be "stuck."

A KIND LETTER, AND A GEM OF A POEM FROM ONE OF ENGLAND'S FAIR DAUGHTERS.

The letter below amply explains itself; and the poem following is just now quite in harmony with the wave of reform both in England and America.

Dear Sir:—My brother, Mr. T. W. Abbott (Abbott Bros.), knowing you to be a strong advocate of temperance, has asked me to send you a copy of my verses, which I have great pleasure in doing. If you like them, please make any use you can of them. I shall be only too thankful for them to be of any use in so good a cause. They are not yet published in this country, as we have not decided on the best way of bringing them before the public; but we intend to do so later on.

In alluding to my brother, Mr. Abbott, I have, of course, conveyed to you that I am one of the daughters of Mr. C. M. Abbott, editor of the *British Bee Journal*. At the time when he was publishing it and carrying on business at Fairlawn, your address was very familiar to me, and my brother has spoken of you so often that I almost feel that I am writing to a friend altho I have not had the pleasure of meeting you. My brother is well, and desires to be very kindly remembered to you. Hoping that you will like the verses, and that thru you they may do good, believe me, Sincerely yours,

E. E. M. FREEMAN.

Toybridge, Lady Margaret's Road, Southall.

THE SUPER-THIEF.

Yes, I'm a thief; and, "the greatest of these,"
Unarmed and unmasked I can take what I please.
In cottage or castle, in mansion or hall,
There is nothing too precious and nothing too small.
I go with my lord when he sits at the feast,
And leave on his visage the mark of the beast.
In my lady's boudoir I enter by stealth,
I rob her of innocence, beauty, and health.
It is part of my nature, and freely confessed,
To do the most harm where they love me the best.
I am trusted alike by the poor and the rich,
But the working man's home is my favorite pitch;
I take of his wages a very large share,
And then steal his job tho it seems hardly fair.
From the cupboard and pantry, the wardrobe and shelf,
If there's anything good—why, I just help myself.
I empty the cellar and leave a cold hearth,
While nothing but ashes I strew in my path;
And still they entreat me: "Oh! stay with us, stay,"
So fair is my promise, so pleasing my way.
Now you know of my faults; but none will deny
There are wonderful things I can do if I try.
I can raise to the peerage a man of low birth,
I can strive with the mighty and bring him to earth;
I can kill a brave soldier and sink a big ship,
Entangle a bishop, and cause him to trip.

All this I can do, and still leave much untold,
For I cheat the most cunning and scare the most
bold.
As to why I'm at large—are you sure you can't
guess?
Ask my lords at Westminster, the Commons, the
Press;
But for their friendly aid I should soon come to
grief,
For to scotch the offender is death to the thief.
Ask the parson and doctor—they know all my ways;
I have lived by their sanction and grown by their
praise;
And so I am flourishing, scornful, and free;
You must catch my fine friends if you want to catch
me. ALCOHOL.

ALCOHOL "ONE OF THE MOST POWERFUL ALLIES OF THE PNEUMONIA GERM."

If the following is true, which we clip from the *Plain Dealer,* what is there wrong about *state-wide* and *nation-wide prohibition?*

PNEUMONIA SCARES NEW YORK: VIRULENT WAVE CAUSES 2377 DEATHS IN NINE WEEKS.

What is described by the Department of Health as a peculiarly virulent form of pneumonia has caused 2377 deaths in this city during the last nine weeks, or 534 more than during the corresponding period a year ago. The department says there is little indication that the infection is abating, and repeats its warning against alcohol as one of the most powerful allies of the pneumonia germ.

THE YOUTH'S INSTRUCTOR TEMPERANCE ANNUAL.

The issue for 1917 is a gem, as it has been for years past. The picture on the cover is a triumph of art, and every one of its 20 pages, more or less illustrated, ought to stir our nation. Here is one from the first page:

A missionary in Africa ordered a case of Bibles for his work of evangelization. When he went to the freight office to get the Bibles, he was informed, that in order to get the box, sixteen thousand cases of liquor had first to be removed.

Price of the annual, 10 cts.; in lots of 25, 5 cts. Address Tacoma Park Station, Washington, D. C.

"WE ARE MARCHING ON."

The *Woman's Journal* sends us an advance proof, dated March 17, as follows:

SUFFRAGE NEWS.

A bill giving Vermont women tax-payers the right to vote in municipal elections passed the House by a vote of 104 to 100.

"CLEAN, SWEET, AND PURE" (?) CIGARETTES.

Mr. Root:—I take the liberty of writing you a few lines concerning one of our worst evils, the cigarette. I am enclosing three advertisements clipped from our county papers which the American Tobacco Company are using to "educate" the public, and particulary the young, concerning the "goodness" of their brand of "coffin-nails."

Our fair state has been covered like a blanket with these advertisements. It certainly is the height of absurdity to compare such nice things as soap, flowers, and honey with such nasty things, not to mention a level, or picture a hatchet such as might have been the one figuring in the "cherry-tree" episode of the immortal George Washington. It is suggestive.

I recently called down an editor of one of these papers which has never yet been guilty of printing whisky advertisements; but now each issue carries such poisonous material. I compared the cigarette advertisement to the whisky advertisements, and asked him if he thought there was much difference in the advertisements or in the evil resulting from such advertising; also about the probability of his boy being influenced, and, later, becoming a cigarette fiend. It had effect. B. I. B.

Stanford, Ky.

With the above letter come three double-column clipping, from home papers. At the head of one of them we read: *"Clean, sweet, and pure"* applied to their brand of cigarette; and to illustrate it they picture a nice cake of soap, a good picture of a section of honey, and a *lily.* On another sheet they show a carpenter's level, and the hatchet and cherry-tree to emphasize the fact that the cigarette is "on the level" and "can't tell a lie." All this is guaranteed by the famous *American Tobacco Co.*

WHAT TO DO WHEN YOU ARE "CATCHING" A COLD.

The following from the *Ohio Farmer* expresses my views exactly:

The season of changeable weather is here, when we are alternately too warm or too cold, when, as, one contributor puts it, "the 'going' is likely to be staying at home," when the sun and the wind, the snow and the rain are likely each to be in the lead all in the same day. Are we prepared to withstand their onslaughts? or are we going to have to give way and submit to colds, coughs, pneumonia, pleurisy, etc.? It all depends on how well we are caring for our machinery. Sufficient rest, fresh air, proper amount and proper selection of food, proper exercise, the right clothing protection, and regular and sufficient elimination of body waste, are the best antidotes. It is astonishing what a lot of abuse the human machine can stand up under, and how quickly it will respond to fair treatment when it has been abused. When we find that a cold is creeping upon us, often a very simple, easy bit of treatment can head it off. For example, instead of dosing with medicine that the stomach would likely be much better off without, try getting rid of the contents of the digestive tract as fast as possible. Flush the system with plenty of water, preferably hot (not scalding, however), go to bed early, with windows wide open and with your head and body warmly protected. Before you drop off to sleep spend a few minutes breathing deeply of the fresh air. In the morning lie and breathe similarly for several minutes, with mouth closed if possible, and the chances are that you will be ready for a good breakfast.

SOME VERY KIND WORDS FROM A LONG-TIME FRIEND.

Friend Root:—Enclosed find $2.00 which please turn over to renewal of my subscription to GLEANINGS. To tell the truth, it is solely on your account that I take GLEANINGS now. You do not know, my friend, what an influence you have had on my life ever since, along in the 70's, I saw your advertisement in good old Orange Judd's *American Agriculturist,* "Friends, if any of you are interested in bees or honey, write to A. I. Root, Medina, Ohio."

That was a turning-point in my life, for I took the genuine bee-fever from reading your literature, and then followed fast the ups and downs in my beekeeping career. Many errors and mistakes I made—among them sending you an order of over five hundred dollars for chaff hives in the flat—hives that proved a perfect nuisance; then the putting in of nearly 1000 colonies of bees in Simplicity hives with their beveled edges, and thin-topped metal-covered frames that sagged so when filled with brood or honey—costly mistakes to me, but unavoidable in the evolution of the times and profession.

I do not believe I have had any personal communication with you since I have come out here to this wonderful country, now nearly two years. I should have preferred Florida; but as a number of my children were out here, and the others preferred California to Florida, and I wanted to be with them, I came here, and do not in the least regret it. We are situated in the suburbs of Los Angeles, tho our postoffice is San Gabriel. Of course I have a few bees; but my hobby in life now is my flowers, chiefly gladioli, and I spend many hours busily employed every working day of the year among them. I enjoyed wonderful health until last October, when an attack of rheumatism laid me up for three months, and I have not now the vigor I had before the attack. I read all you write, and you and I are in almost perfect accord on every subject. I am enclosing a clipping showing the great benefits that have resulted in abolishing the manufacture and use of vodka, and wish there were some method by which we could obtain the same results here with whisky and beer.

Does not the great war astonish you more and more? Surely they are mad, insane, blind with fury. My old grandfather used to tell me, when I was a boy, "whom the gods would destroy they first make mad," and it is surely now being verified. I hope and pray it may soon be over.

I am in my 78th year, and trying to live according to Terry's teachings. I am sorry he has passed on. He should have lived longer. His was a useful life. Yours is also, and may it be prolonged to the century mark is the wish of your old friend.

San Gabriel, Cal., July 21. E. T. Flanagan.

P. S.—Now, friend Root, should you ever visit Los Angeles again I really want you to call on me and let us go over some of the past, and have a good talk of old times; for, altho I am deaf, I manage to hear much that is said by watching the lips of the speaker. Just let me know, and I will give you clear directions how to find me. I have a happy home, and no one was ever blest with better children than I have.

My good friend Flanagan, one would suppose that, after investing $500 in hives that proved useless, and frames with top-bars that sag, etc., you would hardly feel so friendly. It is very kind of you indeed to let me off so easily by saying "unavoidable in the evolution of the times," etc. We take it you must be one of the sort that "suffereth long and is kind." Perhaps chaff hives were not needed in your locality—certainly not in California; but you may be surprised to hear me say just now that not only here in Medina, and within a large part of the north territory, many people are coming to the conclusion that the old chaff hive of years ago is giving better results than any other form of wintering, not excepting cellaring. Ernest said only a few days ago he did not know but beekeepers here in the North would have to go back to the old chaff hive. When I made frames with those thin top-bars I intended wire braces to support the top-bar. The metal-corner frames were, I believe, generally discarded because of the fashion of moving hives to out-apiaries in order to get a better honey-flow, etc.

I heartily agree with you in regard to the wicked war. Should I get to California again I will most assuredly hunt you up.

GROWING OLD GRACEFULLY.

In speaking of the good woman who has lived to be 102 years old I forgot to mention that the title of the article was "Growing Old Gracefully." At the close of a letter from our long-time friend Irving Keck he writes as follows:

> This summer the old friends are rapidly slipping away. Within a month not less than half a dozen old schoolmates and intimate associates have "fallen asleep," and the summons may come for me any day. The days of "getting my shoulder to the wheel" and "staying on the job" are done. All I can hope to do is to "keep out of the way" from this on. Irving Keck.
>
> Bowling Green, Fla., July 24.

My good friend Keck, I agree that we old fellows should try to avoid getting in the way; but I do not believe we need to drop out entirely. If we look about us we can find many opportunities to lend a helping hand. I want you to hold on as long as a kind Providence permits, in order that I may not feel all alone, should that same Providence permit me to remain after the rest of you have "fallen asleep" as you express it.

APPROVES OF MONTHLY.

H. M. Moyer of Boyertown, Pa., writing under date of Dec. 22, says: "I congratulate you on Gleanings becoming a monthly. A swarm of bees can do more work in one hive than they can if divided in two hives. So with Gleanings—one copy a month is better than two. I have been a subscriber and reader of Gleanings for 33 years or more."

ALTHO CLOSE TO 80, STILL A BEEKEEPER AND GARDENER, AND A HINT AS TO THE REASON WHY.

Mr. A. I. Root:—I have been a reader of Gleanings since 1879, and have enjoyed all your articles very much; and I feel sure you will be glad to hear that about 1882 I was one who took the pledge against smoking, and have kept it ever since (no smoker in the question). I know that my health was improved, and has remained good to this time. Had it not been for your timely writing I don't think I should have been able to write at my age. I am now nearing my 79th birthday, and look after forty colonies of bees and a garden. I met you and Mr. Calvert at Toronto about 1884, then you and your two sons at Detroit a few years ago at the National convention; and now I hope you and your partner in life may be long spared to each other, and be able to conduct the Health and Home papers. My wife and I look for something good when Gleanings arrives.

Lindsay, Ont., Jan. 29.

Lost! 100 Lbs. of Butter!

Yes, you certainly did lose that $30 worth of butter last year, if you milked ten cows and did not use a Sharples. For no other separator skims clean when you turn it *too slow*—and 19 out of 20 people do turn too slow much of the time. The wonderful new Sharples is the *only* separator that skims clean, regardless of how fast or how slow you turn it, because the "suction-feed" makes the milk feed vary with the operating speed. The

SHARPLES SUCTION-FEED CREAM SEPARATOR

Will Avoid This Loss

Will save you the pile of butter (illustrated) *over every other separator.* The figures are based on proven facts taken from Purdue Experiment Station Bulletin 116, which sets forth the great loss of cream from turning *ordinary* separators below speed. The Sharples is the *only* separator that delivers *even* cream, too, at all speeds. Ruggedly built for hard service. Over a million users. Send for catalog to Dept. 126

The Sharples Separator Co., West Chester, Pa.

Also Sharples Milkers and Gasoline Engines

Branches: Chicago San Francisco Portland Toronto

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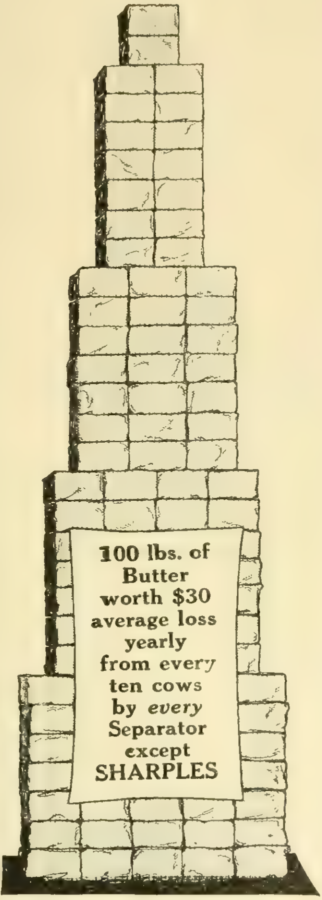

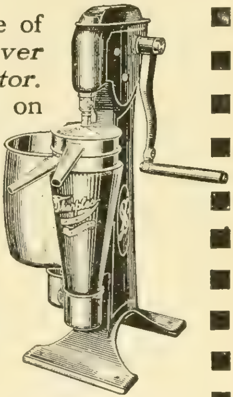

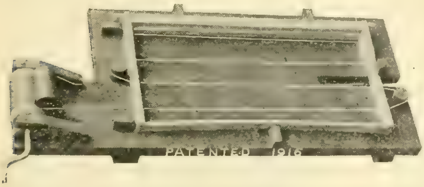

WRIGHT'S FRAME-WIRING DEVICE

Most rapid in use. Saves cost of machine in one day. Tighter wires; no kinks; no sore hands. Price, $2.50, postpaid in U. S. A.

G. W. Wright Company - Azusa, California

BEEKEEPERS' SUPPLIES

Send for new 1917 price list now ready. We are also in the market at all times for extracted and comb honey in any quantity. Give us a chance to bid on your supplies. We can save you money.

The M. C. Silsbee Co., Haskinville, N. Y.
P. O., Cohocton, N. Y., Rt. 3.

Delivered to You Free

Choose from **44 styles,** colors, and sizes in the famous **"RANGER"** Line of bicycles. All are pictured in natural colors in our new 1917 catalog. There are many other models also — in fact the most complete line of bicycles in the world, all at FACTORY PRICES, from **$15.75, $16.95,** up. There is a **Mead** bicycle to suit the taste of every rider — electric lighted **Motorbike** models, **Racers, Juniors** for children; **Ladies'** models too — all at prices made possible only by our **Factory-direct-to-Rider** selling policy.

30 Days Free Trial We will send the **"RANGER"** bicycle you select, FREIGHT CHARGES FULLY PREPAID TO YOUR TOWN, for **thirty days free trial**—actual riding test. We pay return charges if you decide not to keep it, and make no charge for wear and tear during trial. We make no effort to influence your decision. The trial is all at our expense.

Factory-to-Rider Back of your **"RANGER"** — if you decide to keep it — is the oldest and most successful bicycle concern in the world, with a Service department that cares for the parts and repair needs of more than a million riders. With every **"RANGER"** we ship goes a **Certificate of Guarantee** for **Five Years.**

Parts & Repairs **Lamps, Horns,** ready-to-use front and rear **wheels,** Inner Tubes, Tool Kits, etc., etc. Repair parts for all bicycles and coaster-brakes, all accurately pictured and described in the sundry pages of the big new **Ranger** Catalog. All the latest imported and American novelties in equipment and attachments at prices **so low** they will **astonish** you. **TIRES**

Rider Agents everywhere to ride and exhibit "RANGER" bicycles. Select the model you prefer and, while you ride and enjoy it, **make money** by booking the orders of your neighbors.

Send No Money but write today for this new 1917 catalog, also full particulars of the great new offer to send, **all charges prepaid,** the "RANGER" bicycle you select for **30 Days Free Trial.** You cannot afford to buy a bicycle, tires or sundries without first learning what we offer.

The New Electric Lighted RANGER Motorbike Model

We have placed a Special Deposit of **$5000** in the great **First National Bank** of Chicago to guarantee to you the faithful performance of the unusual **trial** agreement.

MEAD CYCLE COMPANY
Dept. C-153 CHICAGO

About Jersey Cattle

Dairymen! —The Truth

You may be prejudiced against the Jersey because you don't know her. Look her up. She's the *Money Cow.*

Get This Book—a history of the breed and full of very interesting tests and facts. It proves conclusively that for pure dairy type, economy of production, richness of milk, long life and adaptability to feeds and climates —all these combined—she stands way above them all. This book "About Jersey Cattle" is free. Get your copy now. You'll find it mighty good reading.

Get This Book

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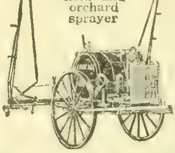
IRON AGE

Farm, Garden and Orchard Tools

Answer the farmer's big questions: How can I grow crops at least expense? How can I get my spraying done and on time? Use an

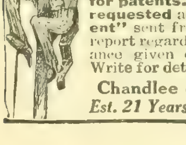
***IRON AGE** Engine Sprayer*

No. 115-P Greatest combined field and orchard sprayer



Sprays 10 rows potatoes, 5 rows canteloupes, cucumbers, etc. at one operation and at 200 pounds pressure. The first and only sprayer **adapted for so rapid field-work** and, at the same time, unexcelled for orchard use. Driven by 4 1-2 H. P. NEW WAY ENGINE—quickly interchangeable with our new Iron Age Engine Digger. We make full line of potato, spraying, cultivating and garden tools. **Write today for free booklet.**

Bateman M'f'g Co., Box 20H, Grenloch, N.J.



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Manufacturers constantly writing us for patents. List of **inventions actually requested** and book **"How to Obtain a Patent"** sent free. Send rough sketch for free report regarding patentability. Special assistance given **our clients** in selling patents. Write for details of interest to every inventor.

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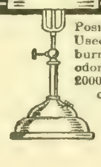

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Positively the cheapest and strongest light on earth Used in every country on the globe Makes and burns its own gas Casts no shadows. Clean and odorless Absolutely safe Over 200 styles. 100 to 2000 Candle Power Fully Guaranteed Write for catalog AGENTS WANTED EVERYWHERE

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

Grow Bigger and Better Vegetables

You can make your Gardening Profitable and Easy with a

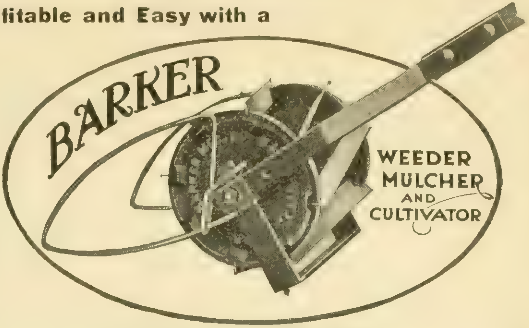
BARKER Weeder, Mulcher, Cultivator. Three garden tools in one.

Kills the weeds and mulches soil IN ONE OPERATION.

Eight reel-blades, working in combination with a stationary knife which passes just below the surface, destroy the weeds and pulverize the crust into a level moisture-retaining mulch.

Has shovel attachment for deeper cultivation; also leaf-guards to protect grown-up plants. "Best Weed Killer Ever Used." Will pay for itself in a single summer. Write for illustrated catalog and special factory-to-user offer.

BARKER MFG. CO., Dept. 10, David City, Neb.



MYERS
PUMPS AND
HAY TOOLS
SOLD BY
DEALERS EVERYWHERE

You Can Open and Close the Doors on Your Barns, Sheds, Garage and Similar Buildings, the Year Through, without a Single "Cuss Word" if They Are Hung with

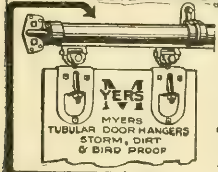
EASY TO PUSH **MYERS** EASY TO PULL

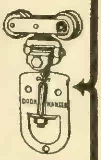
TUBULAR OR STAYON DOOR HANGERS

They roll away the old-time door troubles by preventing and overcoming the balky, off-the-track or frozen-up door. The Adjustable Construction permits a door to be raised or lowered, or moved in or out, as conditions require—A monkey wrench does the trick. Roller Bearings and Large Trolleys insure light operation. Stayon Device prevents door being thrown off the track. Flexible Hinged Joint produces tight fitting doors. You get all these features on MYERS DOOR HANGERS. You also get High Carbon Flat Stayon Track or Reinforced Girder Tubular Track.

Myers Giant and New-way Hangers for Tubular Steel Trac —The All Weather Hangers—are our latest productions—They add the finishing touch in door service on any building.

You want MYERS—Year Through—"Easy Door Ways", and our Catalog tells how to get them. Write us or ask your dealer.





F. E. MYERS & BRO. 351 ORANGE ST. ASHLAND, OHIO.

EVERY FAMILY

should have a copy of the new patriotic song entitled

"How would YOU Like to be a Slave?"

Soul-stirring words set to a lovely melody. Soprano solo with piano accompaniment. Only 35 cents postpaid, silver or P. O. order. Address

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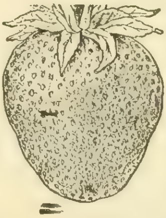

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Tells about planting, pruning, spraying and selling fruit and garden truck.

Ask Us Your Hard Questions,

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A Powerful Fungicide for Fruits, Vegetables and Flowers

Peach Leaf Curl, Brown Rot, Apple Scab, Grape Mildew, Potato Blight, Cucumber Wilt, Bean Blight, Rose Mildew, etc.

Most inexpensive. 1 gal. makes 200 gals. spray. $1 to $2 per gal. according to size package.

Booklet free.

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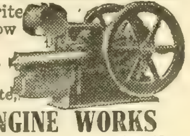
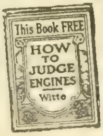
My Copyrighted Book **"How to Judge Engines"** tells how high-grade semi-steel engines are made, advantages over cast iron, how common coal oil in a WITTE reduces power cost 65 per cent. Write today and get my "How-to-Make-Money" folder, and latest WITTE Engine prices. Ed. H. Witte,





WITTE ENGINE WORKS

1937 Oakland Ave., Kansas City, Mo.
1937 Empire Bldg., Pittsburgh, Pa.

QUEENS

For Sale

Red-clover 3-band Italian queens; Root's, Moore's, Davis', extra-select stock, mated with Geo. B. Hows' famous select drones. I know none better for honey-gathering, wintering, beauty, etc. I guarantee 90 per cent pure mated if queens are returned to me. Queens or money back in a reasonable time. No foul brood, no bee disease; apiaries inspected by Mr. Rea and Prof. Franklin Sherman, Jr. Mr. Rea is our bee inspector of this state.

	Price before July			After July 1st		
	1	6	12	1	6	12
Untested queen	.75	4.00	8.00	.70	3.25	6.50
Select untested	1.00	4.50	8.50	.80	3.75	7.00
Tested	1.25	6.00	10.00	1.25	5.00	9.00
Select tested	1.50	8.00	13.00	1.50	6.00	10.00
Extra select tested	2.00	10.00	15.00	2.00	8.00	13.00
½ lb. bees with qn	2.00	10.00	16.00	1.75	8.00	14.00
1 lb. bees with qn	2.50	12.00	20.00	2.00	10.00	17.00

I can furnish bees in lots of 25, 50, and 100 pounds. I am in position to give prompt service this season. My bees are of a famous foul-brood-resisting strain.

H. B. Murray . . Liberty, N. C.

IRON AGE

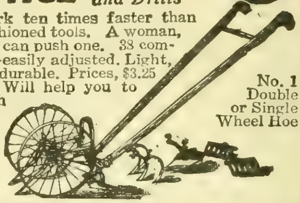
GARDEN TOOLS

Answer the gardner's big questions: How can I grow plenty of fresh vegetables with my limited time? How can I avoid backache and drudgery? Use

IRON AGE Wheel Hoes and Drills

Do the work ten times faster than the old-fashioned tools. A woman, boy or girl can push one. 38 combinations—easily adjusted. Light, strong and durable. Prices, $3.25 to $15.00. Will help you to cut the high cost of living.

Write us for free booklet today.



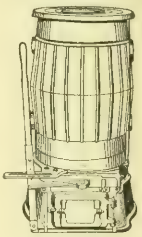
Bateman M'f'g Co., Box 20G, Grenloch, N.J.

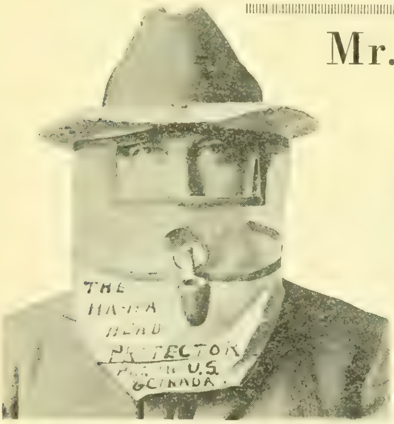
VICTOR and HOME VICTOR

Multiple System
Water Heaters for
House Heating

Heats bath and kitchen boiler too. ONE STOVE AND ONE FIRE YEAR ROUND. There is nothing like it. Send for booklet.

S. V. Reeves, Mfr.
Haddonfield, N. J.





Mr. BEE RAISER, Attention!

At last a practical device which will save you many stings. . .

The Ha-Ha Head-protector

Only practical, durable, and sensible protector made. This protector is made from a special make of BRASS WIRE GAUZE; has transparent and unbreakable eye-piece; has mouth-piece so wearer can smoke. Will fit any hat, and can be adjusted in ten seconds; folds up in a small package; can be carried in vest-pocket. Weight about 4 oz. Will not tear, rot, rust, nor break. Very comfortable to wear. Will protect you from mosquitoes, flies, gnats, as well as from bees. From your dealer or anywhere in the U. S., postage prepaid, price $2.00.

Rhoades Manufacturing Co.

Sault Ste. Marie, Mich.

We believe in Preparedness

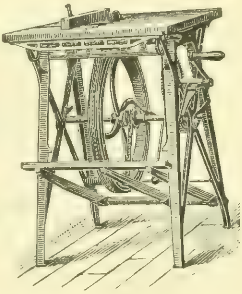
BARNES'
Hand and Foot Power
Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices. Address

W. F. & JOHN BARNES CO.
545 Ruby St.
ROCKFORD, ILLINOIS



BEESWAX WANTED

You will save money and freight on your 1917 foundation by shipping us your beeswax and paying only for its manufacture into "SUPERIOR FOUNDATION" (Weed process).

SUPERIOR HONEY CO., Ogden, Utah

TALKING QUEENS

Laws' Queens Speak for Themselves

Please remember Laws' queens have stood the test of continuous advertising in this journal for this the 28th season. Thousands of customers have testified to the merits of Laws' bees and queens, and if there is a displeased customer I do not know it.

Untested will be ready in April; after which see the following table.

	April to June			June to November		
	1	12	100	1	12	100
Untested	$1.00	$ 9.00	$ 75.00	$ .75	$ 8.00	$ 65.00
Tested	1.25	10.00	85.00	1.00	10.00	75.00
Select Tested	2.00	18.00	120.00	1.50	15.00	100.00

Breeding queens: Guaranteed none better, at all times: each $5.00

Combless Bees AFTER MAY 1st.

1 lb. package, $1.50; 5 to 10 packages each, $1.25; 10 to 50 packages, $1.15
2 lb. package, 2.50; 5 to 10 packages each, 2.25; 10 to 50 packages, 2.15
3 lb. package, 3.50; 5 to 10 packages each, 3.25; 10 to 50 packages, 3.15

Price of queens to be added to above packages.

When 10 or more packages are bought, empty carriers to be returned at my expense.

My queens are all reared in full colonies, plenty of young bees and abundance of fresh honey in the hives. No other plan is so conducive to full-developed and long-lived queens.

My facilities are such that I can mail from 5000 to 6000 queens each season. Circular on application.

Purity of stock and safe delivery guaranteed to your express or post office on all bees and queens from my yards.

Address

W. H. Laws, Beeville, Bee Co., Texas

QUEENS

OF QUALITY

Capacity of Yard over 1000 Queens a Month

After 20 years of careful selecting and breeding I now have a strain of bees that cannot be excelled by any. . . . My queens are all bred from IMPORTED STOCK, the very best in the world for honey-gathering and gentleness. They are not given to swarming. What more do you want in bees than the three above qualities?

Prices April 1st to July 1st.

	1	6	12		1	6	12
Untested	$ .75	$4.25	$8.00	Tested	$1.25	$7.00	$13.00
Selected untested.	.90	5.00	9.00	Selected tested..	2.00	11.00	20.00

GUARANTEE.—You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition, to be purely mated, and to give perfect satisfaction. All queens that do not give satisfaction I will replace or return your money. Send for circular.

L. L. Forehand, Ft. Deposit, Alabama

For Sale --- 10,000 lbs. of Bees in Packages --- Spring Delivery

20 YEARS OF SELECT BREEDING GIVES US BEES OF THE HIGHEST QUALITY
BEES FOR HONEY PRODUCTION..............BEES OF UNUSUAL VITALITY

M. C. Berry & Co., Hayneville, Ala.

Gentlemen:—Will want more of your three-pound packages of bees with queens in spring. The two I bought of you last May did all right; one package made 185 sections of honey and gave one swarm and the other made 296 sections and gave two swarms. I am well pleased.

Kimmell, Ind., Jan. 15, 1917. Melvin Wyseng.

Very Resistant of European Foul Brood, and Safe Arrival Guaranteed.

Swarms of Bees Without Queens April First Delivery

1-lb. packages, $1.25 each;	25 to 50, $1.22½ each;	50 to 100 and up, $1.20 each
2-lb. packages, 2.25 each;	25 to 50, 2.22½ each;	50 to 100 and up, 2.20 each
3-lb. packages, 3.25 each;	25 to 50, 3.22½ each;	50 to 100 and up, 3.20 each

Golden and 3-Band Italian Queens April First Delivery

Untested	75 cts. each, $65.00 per 100	Tested	$1.25 each, $110 per 100
Select Untested	90 cts. each, 75.00 per 100	Select Tested	1.50 each, 125 per 100

Queen's wings clipped free of charge.
Write for descriptive price list. Let us book your order now.
Only a small deposit down required.

LARGEST AND MOST SUCCESSFUL SHIPPERS OF BEES IN PACKAGES

M. C. BERRY & COMPANY, Hayneville, Alabama, U. S. A.

BEES and QUEENS

We wish to offer to the readers of "Gleanings" a chance to procure some of our fine stock of bees. Untested queens, March, April, May, and June, $1.00 each, $5.00 for 6, $9.00 per dozen. Lots of 25 to 100, at 70 cents each. For larger quantities ask for prices. Best tested queens $2.00 each. Three races only—Three-Band, Golden Italians, and Carniolans, reared in separate yards.

Bees by the pound in combless packages $1.50 per lb.; 5 to 10 lb. lots, $1.25 per lb. In lots of 25 to 100 lbs., $1.00 per lb. Safe arrival and reasonable satisfaction guaranteed. Our shipping facilities are good and promptness our motto.

THE CRESMER MANUFACTURING COMPANY, Bee Department, Riverside, Cal.

From Root and H. D. Murry's Famous Stock

THREE-BANDED ITALIANS THE BEST. They are hustlers, gentle to handle, cap their honey white, are very resistant to European foul brood. Some call them Long-tongue Red-clover Queens. Satisfaction and safe arrival guaranteed. We are applying for a patent on a bee-shipping Cage that will allow the queen to lay while on the road, which means several days to you. We use pure SUGAR SYRUP, no honey or candy. Now we will ship in these cages during May and June without any extra charge whatever; 10 per cent discount on all orders received with remittance for May and June. No foul brood in any of our yards. Reference, The Guaranty State Bank, Robstown, Texas, or The City National Bank, Corpus Christi, Texas.

	1	6	12	50
Untested ...	$1.00	$ 5.50	$10.00	$38.00
Tested	1.25	6.50	12.00	45.00
Select Tested	2.00	10.00	18.00	65.00

Pound packages of Bees.

	1	6	12	25	50
1 lb.	$1.50	$ 8.50	$16.00	$33.00	$ 65.00
2 lb.	2.50	15.00	29.50	58.00	115.00

Let us know your wants. Circular free.

Nueces Valley Apiaries ..... Calallen, Nueces Co., Texas

Forehand's Queens . . . Get a good Queen

One that will keep the hive chock full of bees at all times, make the biggest yields of honey, sting less, and look the prettiest, at a medium price.

Over 25 years of select breeding has brought our queens up to a standard surpassed by none, and the superior of many. We have tried the principal races and every method known, and now we have selected the best race and method—the THREE-BAND BEES and the DOOLITTLE METHOD. We USE THE 3-BANDS—WHY? Because they get results.

Dr. Miller, Roots, and Dadants use them.

Our queens are sold by many of the largest dealers in the U. S.

Louis H. Scholl (one of the largest beekeepers of the Southwest) says, "Three-band Italians have proven the best all-round-purpose bee after trying out nearly every race—not only in an experimental way while still at A. M. Col., but in our own apiaries as well." (In Beekeeper's Item.)

Untested	One,	$ .75	Six,	$ 4.25	Twelve,	$ 8.00
Selected untested	One,	1.00	Six,	4.75	Twelve,	9.00
Tested	One,	1.50	Six,	8.75	Twelve,	17.00
Selected tested	One,	2.00	Six,	11.00	Twelve,	20.00

Write for circular giving general description. Mail all orders to

W. J. FOREHAND & SONS, Fort Deposit, Alabama

Queens from Dr. C. C. Miller's Best Breeders

We have made arrangements with Dr. C. C. Miller to keep us supplied with some of his best breeders, and are rearing queens from these superior mothers that we guarantee to be as good as can be reared. These queens are not just individuals that have made a good yield; we all have some colonies that made a good showing, but all do not have a strain that holds the world's record as his does. Think of it—a whole yard of 72 colonies averaging 266 sections weighing 244 pounds. You are getting at a low price the results of fifty years of careful breeding of one of the most successful beekeepers in the world. Safe arrival and entire satisfaction guaranteed on all goods sold.

One untested Miller queen, $1.00, $11.00 per dozen. Tested, 2.00 Ex. Select Tested, $3.50. Breeders, $5.00 to $10.00 each.

One pound bees, $1.25; ten or more, $1.00 per pound. Two pounds, $2.25; ten or more, $2.00 each. One frame nuclei, $1.25; two frame, $2.25; three frame, $3.25. Add price of queen wanted. Full colonies a specialty.

The Stover Apiaries
Starkville, Miss.

Rhode Island Northern-bred Italian

Queens. $1.00. Circular.
O. E. TULIP, ARLINGTON, RHODE ISLAND

QUEENS Select Italians; bees by the pound; nuclei. 1917 prices on request. Write

J. B. Hollopeter . . Rockton, Pennsylvania

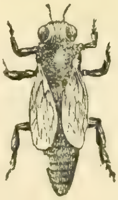
Mott's Northern-bred Italian Queens

are hardy, prolific, gentle, and hustlers, therefore resist well disease.

Untested, $1.00 each; $9.00 for 12.
Sel. Tested, $1.50 each.
Virgins, 50c each; or three for $1.00.
Bees by pound.
Plans "How to Introduce Queens," and "Increase," 25c. List free.

E. E. MOTT, Glenwood, Mich.

GRAY CAUCASIANS . . . . .



Early breeders; great honey-gatherers; cap beautifully white, great comb builders; very prolific; gentle; hardy; good winterers. Untested, $1.00. Select untested, $1.25. Tested, $1.50. Select tested, $2.00. The best all-purpose bee. Bees by the frame and pound.

H. W. FULMER, Box G, Point Pleasant, Pa.

Queens . . Queens

From a strain of Italians, wintered for thirty years in the foothills of the Adirondack Mountains out of doors. Hardy, gentle, industrious, and fine resisters of disease. $1.00 each, or $9.00 per dozen; also nuclei and full colonies.

Charles Stewart, Box 42, Johnstown, N. Y.

Quality . . . Service System

We quote the following prices for April and May:

	1	6	12
Untested	$1.50	$ 7.50	$12.00
Tested	2.00	10.50	18.00

Select Tested. . $3.00 Select Breeder. . $5.00
Extra Breeder. . $10.00

	1	6	12
1-lb. Bees	$1.50	$ 8.00	$15.00
2-lb. Bees	2.50	14.00	27.00
3-lb. Bees	3.25	18.50	35.00

	1	6	12
1-Frame Nuclei.	$2.00	$10.50	$18.00
2-Frame Nuclei.	2.50	12.00	22.00
3-Frame Nuclei.	3.50	20.00	37.00
5-Frame Nuclei.	5.00	22.00	40.00

No queen furnished at the above prices on packages and nuclei. Select kind of queen and add her price, no charge made for clipping.

We guarantee safe arrival on bees and queens in the United States and Canada. We are in a position to furnish price on both bees and queens in large lots. OUR stock is the finest that can be had. We guarantee every queen to be purely mated, or we will replace same by return mail, all orders filled promptly. Our mail and express service is the best, having 24 out-going trains daily.

J. E. Marchant Bee & Honey Co.
Columbus, Ga., U. S. A.
The quick center for deliveries.
A trial will convince you.

QUEENS

Quirin's Improved Superior Italian Bees and Queens. They are Northern Bred and Hardy. . 25 Years a Queen-breeder.

PRICES	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested....	1 00	5.00	9.00	.75	4.00	7.00
Tested	1.50	8.00	15.00	1.00	5.00	9.00
Select tested	2.00	10.00	18.00	1.50	8.00	15.00
2-comb nuclei	2.50	14.00	25.00	2.25	12 00	22.00
3-comb nuclei	3.50	20.00	35 00	3.25	18.00	32.00
8-frame colonies ..	6.00	30 00		5.00	25.00	
10-frame colonies .	7 50	38 00		6.50	32.00	
1-2 lb. pkg. bees ...	1 50	7.00		1.00	5.00	
1-lb. pkg. bees.....	2.00	10.00		1.50	8.00	

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders, $5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above price on bees by pound, nuclei, and colonies does not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Also nuclei and colonies, if wanted before June 1, add 25 per cent to price in table.

Breeders, select tested, and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now.

Reference—any large supply dealer or any bank having Dunn's reference book.

H. G. Quirin, Bellevue, Ohio

The Proof of the Pudding is in the Eating

The quality of Murry's queens and bees is shown in the increasing demand for them. Capacity of queen yards doubled last year and again this season. Advance orders up to March 5th nearly as many as total sales last year. Many old customers are doubling their orders for this season. Why? Because they get a square deal.

Three-banded Italians and Golden Italians. Orders filled by return mail. Safe arrival and satisfaction guaranteed. No disease. Health certificate with each shipment of bees or queens.

Prices	May 1st to Nov. 15th			
Queens	1	6	12	100
Untested ...	$ .75	$4.00	$ 7.50	$60.00
Tested	1.00	5.50	10.00	
Select tested	1.50	8.00	15.00	

Breeders ......5.00 to 10.00 each, any time.

For nuclei and pound packages, see March issue of this journal, or write for circular.

H. D. Murry, Mathis, Texas

Eastern Beekeepers

This is the time you will need hives, sections, and foundation. Let us mail you our catalog giving prices on everything a beekeeper needs. We furnish full and nucleus colonies, bees by the pound, and queens.

A 3-fr. nucleus colony and Italian queen in a shipping-box, $5.10; tested Italian queens, $1.50; untested, $1.10.

Our location enables us to get goods to you promptly.

I. J. Stringham, 105 Park Pl., N. Y.
Home Apiary: Glen Cove, L. I.

Italian Queens and Bees

I am better able to supply the trade with my three-band Italian queens, colonies, and nuclei than ever before. Send for circular and prices.

E. A. Leffingwell, . . Allen, Mich.

Blanke's BEE BOOK

QUALITY BLANKE MARK

This book describes our line of bee supplies. It contains much information valuable to the beekeeper.

We are centrally located. Shipments out of St. Louis will reach you promptly, and our long experience in this line enables us to fill your orders accurately. . . .
Write for Blanke's Bee Book—it's FREE.

BLANKE MFG. & SUPPLY CO.
214-216-218 Washington Avenue, St. Louis, Missouri

PORTER BEE-ESCAPE
Saves Honey, Time, Money

PORTER
BEE ESCAPE
PATENTED

For Sale by All Dealers

THE A. I. ROOT CO., Medina, Ohio
General Agents for the United States

R. & E. C. PORTER, Manufacturers
Lewistown, Ills., U. S. A.

AT BOSTON

New England beekeepers will find everything in the way of supplies they will need the coming season. Place your orders early and avoid the rush. Send for catalog.

H. H. JEPSON, 182 Friend St.

ALWAYS ON TOP

Established 1885

It will pay you to get our 50-page catalog and order early.

Beekeepers' Supplies

The Kind That Bees Need.

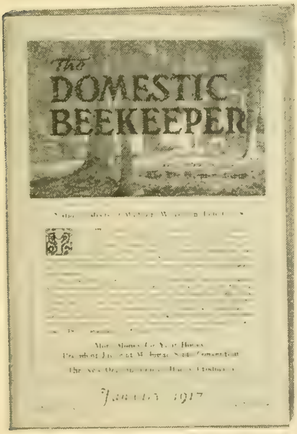
The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

Rhode Island BEEKEEPERS

Beekeepers' Supplies
Everything for the Beekeeper

J. A. Sampson, 10 Summer St., Providence, R. I
(Side of Technical High School)



The DOMESTIC BEEKEEPER

January 1917

A SPECIAL INTRODUCTIONAL OFFER.

THE DOMESTIC BEEKEEPER
For Six Months for Only 25 Cents

The Domestic Beekeeper (successor to the Beekeepers' Review) is now a 48-page magazine with cover, much larger and better every way than the old Review. . . .

We want you to see for yourself what a large and interesting journal the **Domestic Beekeeper** is and are offering you this special price for a trial subscription for six months. Just wrap 25c in one or two cent stamps in a paper and mail it to

The Domestic Beekeeper . Northstar, Mich.

"Griggs Saves You Freight"

TOLEDO

is the place to order your 1917 supplies from, and GRIGGS is waiting for your order.

We are well supplied with a fine stock of Root's Goods for the following season; and if a saving of time and money means anything to you, Mr. Beeman, wherever you are, don't overlook getting our catalog and prices.

Promptness and satisfaction is our motto, whether you have one hive or 500.

HONEY and Beeswax always wanted. Special price list on bees and queens, also Poultry Feeds, mailed with Catalogs.

S. J. GRIGGS & CO.
Dept. 25 Toledo, Ohio
"Griggs Saves You Freight"

When Ordering Supplies

remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk. Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager

BY RETURN MAIL

Choice Tested Queens, $1.00 each, reared last fall and wintered in four-frame nuclei. Queens that give satisfaction, bees that get the honey, our strain of three-band Italians. No disease in this locality. Satisfaction guaranteed on all queens. Untested queens in April and May, single queen, $1.00; $9.00 per doz.

J. W. K. Shaw & Co., Loreauville, La.

Reasonable Prices
Good Service

Place your order now—don't wait. Root's "Quality" goods. I guarantee satisfaction. . . .

A. M. Moore
Zanesville, Ohio

PENNSYLVANIA BEEKEEPERS

Our catalogs now out. Postal will bring you one. Root's goods at Root's prices. Prompt shipment.

E. M. Dunkel, Osceola Mills, Pa.

PATENTS Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.
Chas. J. Williamson, McLachlan Building
WASHINGTON, D. C.

Full Values in

"Falcon" Beekeepers' Supplies

For the last forty odd years during our manufacture of "**FALCON**" supplies it has been our endeavor to place upon the market the very best possible line of supplies, and we pride ourselves in having accomplished this. "**FALCON**" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "**FALCON**" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "**FALCON**" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid Dealers Everywhere "Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK
where the good beehives come from.

DOOLITTLE & CLARK

will have some choice breeding queens ready for shipment May 1. Prices: $2.50, $5.00, $10. Untested, $1.00 each; 6, $5.00; 12, $9.00.

Marietta, Onondaga Co., N. Y.

If You Need Queens for Good Results We Have Them.

As Foul-brood Resisters none are better. . TRY THEM.

GOLDEN QUEENS.

1 Untested,	$1.00;	six, $5.00;	twelve, $ 9.00
1 Tested,	1.50;	six, 8.00;	twelve, 15.00

THREE-BAND QUEENS.

1 Untested	$ .75;	six, $4.00
1 Tested	1.00;	six, 5.00

NUCLEI, THREE-BAND ONLY.

1 Frame with Untested Queen,	$2.50;	six, $15.00
2 Frame with Untested Queen,	3.50;	six, 18.00
3 Frame with Untested Queen,	4.00;	six, 20.00

If Tested Queens are wanted add 50c extra to nuclei. Satisfaction guaranteed.

W. J. Littlefield, P. O. Box 582, Little Rock, Ark.

3-banded Italians...

From May 1 until June I

Untested, . . .	$1.00;	six, $4.50;	twelve, $8.00
Tested, ...	1.25;	" 5.50;	" 10.50

From June 1 until November 1

Untested, ...	$ .75;	six, $4.00;	twelve, $7.50
Tested, ...	1.00;	" 5.00;	" 9.00

Select tested, $2.00 each. See ad. in April 1 "Gleanings." Circular free.

John G. Miller, 723 C St., Corpus Christi, Tex.

Queens of Quality

Select, three-banded, leather-color Italians—bred for honey production. . . Untested queens, 75c each; 6, $4.25; 12, $8.00. . . Descriptive circular free.

J. I. Banks, Dowelltown, Tennessee

Beginner's Book of 28 Pages, Free

Also our 44-page Bee-supply Catalog for 1917 is ready for mailing. Ask for your copy now.

OUR PRICES ON BEES AND QUEENS: 1 lb. of bees with queen, $2.25; 10 lbs., $20.50; 100 lbs., $190.00; 1 frame with queen, $2.00; full colonies, one-story hive included, $8.75; untested queens, 75c each. Our complete price list free, and safe delivery guaranteed.

The Deroy Taylor Company, Newark, N. Y.

SOUTHERN BEEKEEPERS

Get the Famous Root Goods Here

Veils, 65c; Smoker, 90c; Gloves, 65c pair; wire-imbedder, 35c; honey-knife, 80c; 1-lb. spool wire, 35c; medium-brood foundation, 1 to 11 lbs., 58c per lb.; 11 to 25 lbs., 56c; 50 or 100 lb. lots, 53c. Ten-fr. wood-zinc excluders, 50c each; Hoffman frames, $3.75 per 100. Honey-extractors for sale. I am paying 28c cash, 29c trade, for wax.

J. F. Archdekin, Bordlonville, Louisiana.

Increase Your Honey Crop

by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested, each, $1; 6, $5. Tested, each $1.25; 6, $5.50. Breeders, $5.

FRED LEININGER & SON, Delphos, Ohio

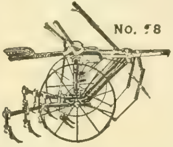
IRON AGE ?

Farm, Garden and Orchard Tools

Answer the farmer's big questions: How can I grow more crops with least expense? How can I cultivate more acres and have cleaner fields?

IRON AGE Riding Cultivator

will help you do this. Has pivot wheels and gangs with parallel motion. Adjustable to any width of row. Every tooth can be raised, lowered or turned to right or left. Lever adjusts balance of frame to weight of driver. Light, strong and compact—the latest and best of riding cultivators. We make a complete line of potato machinery, garden tools, etc. Write us today for free booklet.



Bateman M'f'g Co., Box 20D, Grenloch, N.J.

"Best" Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. **Agents wanted. Big Profits. Write for Catalog.** THE BEST LIGHT CO. 306 E. 5th St., Canton, O.

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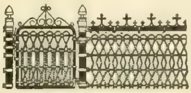

Attractive, Strong, Durable, all steel, for Lawns, Churches or Cemeteries. Costs less than wood. **DIRECT TO YOU at Manufacturers Prices.** Catalogue Free. Write today.

KITSELMAN BROTHERS, Box 403 MUNCIE, INDIANA.

LE PAGE'S CHINA CEMENT

STANDS HOT AND COLD WATER 10¢

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

Amber honey in new 60-lb. cans.
Van Wyngarden Bros., Hebron, Indiana.

FOR SALE.—To the higest bidder, a limited quantity of Michigan's best white extracted honey, in 60-pound tins.
A. G. Woodman Co., Grand Rapids, Mich.

HONEY AND WAX WANTED

WANTED.—Extracted honey at jobbing prices. National Honey-Producers' Asso., Kansas City, Mo.

WANTED.—Comb and extracted honey at jobbing prices. Nat. Honey-Prod. Asso., Kansas City, Mo.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED TO BUY a quantity of dark and amber honey for baking purposes.
A. G. Woodman Co., Grand Rapids, Mich.

HONEY WANTED. — Extracted, white, light amber, and amber of good quality. Can use several cars. Send samples and prices.
Wesley Foster, Boulder, Colo.

WANTED.—White-clover and light-amber extracted honey. Will buy in lots of 1000 lbs. to a carload. Send sample and lowest price.
M. E. Eggers, Eau Claire, Wis.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

HONEY LABELS. — Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Ct.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—Good used 60-lb. cans, 2 in a case.
D. H. Welch, Racine, Wis.

FOR SALE.—Water-power feed and buckwheat mill; house, barn, and 25 colonies bees; also 112-acre farm. Will sell either one.
A. J. Gorton, Gregory, Mich.

Northwestern beekeepers can now get Root's supplies at catalog prices near home and save time and freight; also Italian bees and queens. Geo. F. Webster, Valley View Farm Apiary, Sioux Falls, S. Dak.

THE PERFECT Bee-Frame Lifter. For descriptive circular address,
Ferd C. Ross, Box 194, Onawa, Iowa.

Root's supplies at Root's prices. Special offer on 3-frame nuclei for the season.
L. D. Martine, 206 E. Jefferson, Louisville, Ky.

FOR SALE.—260 L. frames, drawn combs, wired; hives, extractor, etc.; no disease.
P. H. Dunn, Akron, Iowa.

We carry a complete line of bee-supplies. Ask for our bee-supply catalog. Let us quote you on your requirements. Deroy Taylor Co., Newark, N.Y.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

HONEY LABELS that will tempt the buyer to purchase your honey. Neat, attractive labels at right prices. Samples Free.
Liberty Pub. Co., Sta. D, Box 4-E, Cleveland, Ohio.

FOR SALE.—Hundred either eight or ten frame bodies of L. combs for extracting, and 6-frame extractor; 100 lbs. 4 x 5 foundation.
Parma Bee and Honey Co., Parma, Idaho.

FOR SALE.—50 lbs. medium brood foundation for Hoffman frames, at 45 cts. per lb.; 100 used 60-lb. cans at 5 cts. per can.
J. Holzhauer, 879 Sheridan, Detroit, Mich.

FOR SALE.—Boardman solar extractor, Hatch wax-press, Woodman foundation-fastener, gas-oven for liquefying honey; capacity six 60-lb. cans.
E. S. Miller, Valparaiso, Ind.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—Bargain prices in B grade sections, 4¼ x 1 15/16, and 4¼ x 2 inch. A sections in 4¼ x 1⅝, style 2. Also extracting-supers, eight and ten frame size, as well as Danz. shallow frames.
F. C. Scranton, 915 Walnut St., Des Moines, Ia.

FOR SALE.—45 Danzenbaker extracting supers used two seasons, combs wired, at special low price. A few Danz. extracting supers, nailed, with frames but not foundation. A few used Danz. hives.
A. I. Root Co., Des Moines, Iowa.

FOR SALE.—200 T supers for 4¼ x 4¼ x 1⅞ sections, unpainted, 15c each, in lots of 25 or more. 150 dovetailed supers 4¼ x 4¼ x 1⅞ sections, painted, 25c each, 8 and 10 frame size. 15 Danz. hives, one complete super each hive, painted, $1.25 each. 50 drone-traps, alley, 20c each. 50 Miller feeders, 20c each. Lots of other stuff cheap. Write your requirements. Money refunded if goods are sold before arrival of order.
A. W. Smith, Birmingham, Mich.

WANTS AND EXCHANGES

WANTED.—25 colonies of bees, more or less.
64989 George, 53 Forest St., Montclair, N. J.

WANTED.—15 B or 25 B second-hand extractor in good condition. A. N. Henne, Jones, Mich.

WANTED.—15 to 100 colonies of bees; 10-fr. hives; wired frames. Price reasonable. P. O. Box 596 "U." Farm, St. Paul, Minn. 72186

Bees wanted within fifty miles St. Albans or Montreal. Myself pack and move them.
F. Allen, Philipsburg, Que., Canada.

Wax and old combs wanted for cash or to make up on shares, beekeeper to factory direct.
J. J. Angus, Grand Haven, Mich.

WANTED.—To buy in the southern states or California a small bee and fruit farm. Offers with all details and photos. A. I. Root, Co., Medina, Ohio. F—3307

75 pairs extra fine Carnean pigeons—both red and yellow, $3 and $4 per mated pair. Will exchange some for straight Italian bees.
Isabella E. Jewell, Park Ave. E., Vineland, N. J.

FOR SALE OR EXCHANGE. — Everbearing strawberry, raspberry, and blackberry plants, for bees by pound, or seeds.
John D. Antrim, Rt. 1, Burlington, N. J.

WANTED.—Shipments of old comb and cappings, for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

WANTED.—Queens, 100 to 500 Italians, untested, in lots of 25 to 50; also some cheap bee-feed—possibly 1000 lbs., and to rent, with option of buying, a foundation-mill, 8 or 10 inch brood. Above articles must be good for the purpose intended and cheap. John H. Koontz, Stewardson, Ill.

GOATS

MILCH GOATS.—"Profit and Pleasure in Goat-Keeping," pronounced by experts the best goat book, regardless of price; profusely illustrated; by mail, 35 cents. Fred C. Lounsbury, Plainfield, N. J.

PATENTS

PATENTS SECURED or All Fees Returned. Patents Sold Free! Our "Patent Sales Department" bulletin, and books, Free! Send data for actual free search
E. E. Vrooman & Co., 834 F, Washington, D. C.

ATTENTION—PATENTS. You will like my easy plan. Write for free booklet.
C. L. Drew, 3 Victor Bldg., Washington, D. C.

POULTRY

S. C. Brown Leghorns; stock, eggs, baby chicks. Circular. H. M. Moyer, Boyertown, Pa.

FOR SALE.—Rose Comb Brown Leghorn eggs for setting from good winter and summer layers, and blue-ribbon stock; also penciled Indian Runner duck eggs. Eggs, $1.25 per 15; $3.50 per 50; $6.00 per 100. Joseph A. Reinecke, Rt. 5, Seneca, Kansas.

Beekeepers should be keepers of chickens also, Try winter-laying, prize-winning, 200-egg strain of White Wyandottes. Eggs, chix, and breeding stock for sale. Tell me how many you want, and when, then I will quote prices to please you.
Dr. Elton Blanchard, Youngstown, Ohio.

REAL ESTATE

FOR SALE.—32-acre farm, stock and tools; 25 acres crops, nice house, ¼ mile from city limits.
C. H. Tidd, Dade City, Fla.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free. C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

VIRGINIA, N. C., W. Va., and Ohio Farms at $15.00 per acre and up offer big value for the price. Best climate, markets, schools, and transportation. Good land and neighbors. Write F. H. LaBaume, Agr'l Agt. N. & W. Ry., 246 Arcade, Roanoke, Va.

FOR SALE.—10-acre home; 4 acres in blue-grass pasture; 4 acres in alfalfa; 2 acres in garden and orchard; 12 varieties of fruit; watered by 3 springs and creek; 4-roomed house and out-buildings; ½ mile to school; 1 mile to railroad station; electric lights and telephone; $2800; terms easy; 100 colonies bees also for sale.
Jes. Dalton, Route 1, Cove, Oregon.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

Well-bred bees and queens. Hives and supplies.
J. H. M. Cook, 84 Cortlandt St., New York.

When it's GOLDENS it's PHELPS. Try one and be convinced.

FOR SALE.—Italian queens. See large advertisement elsewhere. H. B. Murry, Liberty, N. C.

Full colonies fine Italian bees at bargain prices. Write J. York Trigg, 811 Elm St., Dallas, Tex.

Phelps' queens will please you. Try them and you will be convinced.

Italian bees and queens. Send for circular.
Ira C. Smith, Dundee, Oregon.

FOR SALE.—Full colonies fine Italian bees, low price. L. H. Robey, Worthington, W. Va.

FOR SALE.—Golden Italian queens. In June, untested, 60 cts. J. F. Michael, Winchester, Ind.

FOR SALE.—10 colonies of bees in 10-frame hives.
Emil Tappert, 2442 N. Avers Ave., Chicago, Ill.

Italian bees, 2 lbs. with young queen, $3.00. Satisfaction guaranteed.
Joe C. Weaver, Cochrane, Ala.

Queens for July and later delivery. No more rush orders till July 1st.
J. E. Wing, 155 Schiele Ave., San Jose, Calif.

FOR SALE.—E. E. Mott's strain of Italian queens 90c each, $9.00 per doz. Send for list.
Earl W. Mott, Glenwood, Mich.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

"She-suits-me," bright Italian queens, $1 after May 15. Orders booked now.
Allen Latham, Norwichtown, Conn.

Italian Bees and Queens, Root's goods, and Cary hives. Catalog mailed on request.
F. Coombs & Sons, Brattleboro, Vt.

Tested leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Select golden and three-banded Italian queens, bred for honey-gatherers; gentle and prolific; 70 cts. each; 6, $3.75; 12, $7.25. Virgins, 30 cts.
G. H. Merrill, Pickens, S. C.

FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, $1.00; tested, $2.00.
Wallace R. Beaver, Lincoln, Ill.

FOR SALE.—Bright Italian queens at 75 cts. each; $7.50 per doz. Ready April 15. Safe arrival and satisfaction guaranteed.
T. J. Talley, Rt. 3, Greenville, Ala.

Italian bees in 1 and 2 lb. packages; will sell on account of long drouth. Write for prices. J. Wilson Jones, Box 274, Falfurrias, Brooks Co., Tex.

Vigorous, prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing. A. V. Small, 2302 Agency Road, St. Joseph, Mo.

FOR SALE.—25 colonies of Italian bees, frames wired, combs built on full sheets of foundation; 8-fr. colonies, $6; 10-fr., $7 with queen.
Henry Shaffer, 2860 Harrison Ave., Cincinnati, O.

My 3-banded Italian queens will be ready to ship April 1. Write for prices of bees and queens by the pound. Safe arrival and satisfaction guaranteed.
J. A. Jones, Greenville, Ala.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1; 6 for $5. Wm. S. Barnett, Barnetts, Va.

Leather-colored 3-band Italian bees, $1.25 per pound. Tested queens, $1.00; untested, 75 cts. each; 2-frame nuclei, $2.00. Delivery after April 15.
C. H. Cobb, Belleville, Ark.

QUEENS ON APPROVAL.—A select tested queen sent on approval. Send address for description, etc. Bees and supplies for sale.
A. M. Applegate, Reynoldsville, Pa.

BUSINESS-FIRST QUEENS. — Three - banded Italians—untested, $1.00 each; 6 for $5.00. Send for price list and $10 free offer. No disease.
M. F. Perry, Bradentown, Fla.

Queens, Queens, Queens. We are better prepared than ever to supply you. Untested, 75c each; tested, $1.25 each; select tested, $2.00 each. See our big illustrated ad on first leaf of this journal.
W. D. Achord, Fitzpatrick, Ala.

FOR SALE.—Italian bees and queens. One-pound, two-pound, and three-pound packages, with queens; also on frames and full colonies. Ask for our price list, free beginner's book, and bee-supply catalog.
Deroy Taylor Co., Newark, N. Y.

My bright Italian queens will be ready to ship April 1 at 75 cts. each; virgin queens, 30 cts. each. Send for price list of queens, bees by the pound; safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

Two-frame nuclei 3-band Italian bees, $2.25; 1 lb. bees with queen, $1.65. Hoffman brood-frames, wired, and foundation, at catalog prices less carriage, if ordered for parcel post. J. B. Marshall & Son, Rosedale Apiaries, Big Bend, La.

My bright Italian queens will be ready to ship April 1, at 60 cts. each: virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, $1.00; 6, $5.00; tested, $2.00; breeders, $5.00 to $10.00.
J. B. Brockwell, Barnetts, Va.

FOR SALE.—29 stands Italian bees — strong healthy colonies; eight and ten frame dovetailed hives; also extra hives, supers, feeders, and a complete list of implements. These go at a bargain.
J. F. Drebert, Boomer, W. Va.

TO INQUIRERS.—I sell no queens directly, but have an arrangement with The Stover Apiaries, Starkville, Miss., which I keep supplied with best breeders, and they can supply you with my stock.
C. C. Miller, Marengo, Ill.

QUEENS.—Improved three-banded Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, $8.00; select, $1.00; dozen, $10.00; tested queens, $1.25 each; dozen, $12.00. Safe arrival and satisfaction guaranteed.
H. C. Clemons, Rt. 3, Williamstown, Ky.

FOR SALE.—Mott's northern-bred Italian queens are hardy, prolific, gentle, and hustlers, therefore resist disease well. Bees by pound. Plans, "How to Introduce Queens and Increase," 25 cts. List free. E. E. Mott, Glenwood, Mich.

Head your colonies with some of our vigorous young three-band Italian queens. Untested, June 1, $1.00; $9.00 per doz.; nuclei and full colonies. Satisfaction guaranteed.
A. E. Crandall & Son, Berlin, Conn.

Golden Italian queens, bred strictly for business, that produce a strong race of honey-gatherers; untested queens 75 cts. each; $8.00 per dozen: $60.00 per 100; tested, $1.50 each. Prompt service and satisfaction guaranteed.
L. J. Dunn, 59 Broadway Ave., San Jose, Cal.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey - gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; doz., $9.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Son, Wilcox St., Binghamton, N. Y.

GOLDENS THAT ARE TRUE TO NAME.—Write for testimonials. One race only. Unt., each, 75c; 6, $4.25; 12, $8.25; 50, $32.50; 100, $60.00. Tested, $1.50; select tested, $2.00. Breeders, $5.00 and $10.00.
Garden City Apiaries, San Jose, Cal.

My choice northern-bred Italian queens are hardy, vigorous, and prolific. May and June, untested, $1.50; select unt., $2.00; tested, $3.00; after July 1, unt., $1.00; select unt., $1.25; tested, $2.00; select tested, $2.50. Free circular.
F. L. Barber, Lowville, N. Y.

North Carolina bred Italian queens of Dr. C. C. Miller's famous strain of three-banded Italian bees; June 1, untested, 1, 90c; 12, $9.00; tested, 1, $1.25; 12, $12.00; selected tested, 1, $1.75; 12, $15.00. Safe arrival and satisfaction guaranteed.
L. Parker, Rt. 2, Benson, N. C.

Golden Italian queens of the quality you need, bred strictly to produce Golden bees that are real workers. Untested, one, 75 cts.; 6, $4.25; 12, $8.25; 50 or more, 60 cts. each. Prompt delivery and satisfaction guaranteed.
L. J. Pfeiffer, Rt. A, Box 219, Los Gatos, Cal.

Golden Italian queens from a breeder that was a first-premium winner at Illinois State Fair in 1916; untested, 75 cts.; six for $4.25; doz., $8.00; select untested, $1.00; 6 for $5.00; 12 for $9.00; tested, $1.50; 6 for $8.00.
A. O. Heinzel, Rt. 3, Lincoln, Ill.

QUEENS OF SUPERIOR QUALITY.—I have a strain of three-banded bees, selected from some of the best breeders in the United States—bees that will fill your heart with joy, and your hives with honey. I am booking orders for June delivery. Write for price list. H. N. Major, South Wales, N. Y.

FINE ITALIAN QUEENS.—Can furnish select stock at following prices: Single queen, $1.00; 2 queens, $1.75; 3 queens, $2.50; 12 queens, $9.00; 6 or more at dozen rates. No disease. Safe arrival. Can begin to furnish about May 15. Give me a trial order. Chas. M. Darrow, Star Route, Milo, Mo.

ITALIAN QUEENS, northern-bred, three-banded, highest grade; select untested, guaranteed; queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness, and perfect markings. Price, one, $1.00; 12, $9.00; 50, $30.00. Send for circular.
J. H. Haughey, Berrien Springs, Michigan.

ENERGETIC HONEY - GATHERERS. — Best three-band stock. Untested queen, 75 cts. Bees per lb., $1.25. In quantity, price quoted on application. Prompt shipments. Safe arrival and satisfaction guaranteed. Shipments ready May 15. No disease in this community. Gila Valley Apiaries, M. G. Ward, Mgr., Duncan, Arizona.

FOR SALE.—18 swarms of bees in Root Buckeye and Standard hives, with supers and all supplies, including Novice extractor. Photo and list on application.
Fay McFadden, Granville, N. Y.

Golden and three-banded, also Carniolan queens. Tested, each, $1.00; 6 or more, 85 cts. each. Untested, each, 75 cts.; 6 or more, 65 cts. each. No bees for sale.
I. N. Bankston, Eagle Ford, Tex.

I am now booking orders for my 3-banded Italian queens for delivery after May 20; one untested, 75c; 6, $4.25; 12, $8.00; tested queens, $1.50.
Robt. B. Spicer, Wharton, N. J.

BREEDING QUEENS.—We shall have a nice lot of Italian queens for sale this spring. The have wintered fine. Prices, $2.50, $5, and $10. Untested queens about June 15.
Doolittle & Clark, Marietta, N. Y.

Golden Italian queens about May 1, that produce golden bees; good honey-gatherers. No foul brood. Select tested, $1.25; tested, $1.00; untested, 75 cts.; 6, $4.25; 12, $8.00. No nuclei or bees for sale.
D. T. Gaster, Rt. 2, Randleman, N. C.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

FOR SALE.—1000 lbs. bees in 2-lb. packages; 1 to 49, 2 lbs. bees in package, $2.25 each; 50 to 500, 2 lbs. bees in package, $2.12½ each. Untested Italian queens, 75 cts. extra. Safe arrival guaranteed.
H. E. Graham, Gause, Texas.

FOR SALE.—75 to 100 colonies of bees in eight-frame Standard hives, either Hoffman or plain frame. Frames all wired and full sheets of foundation used. Price $5.50 per colony, if all are taken; $6.00 for less number. Hives are new, or nearly so, and well-painted. Bees wintered successfully.
S. Conthard, Thompsonville, Mich.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money returned by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

Good Italian queens. Tested, $1.00; untested, 75 cts. Bees in 1-lb. packages, with untested queen, $2.25; 2-lb. package, $3.25; 1-lb. package, with tested queen, $2.50; 2-lb. package, with tested queen, $3.50. Nuclei, 2 frames, with untested queen, $3.25; 3 frames, $4.00. Nuclei with tested queen, 2 frames, $3.50; 3 frames, $4.25. We can please you.
G. W. Moon, 1904 Park Ave., Little Rock, Ark.

Three-banded queens only; ready after May 1. Dr. C. C. Miller queens, $1.00 each; 12 for $10.00; breeders, $10.00 each; my own strain, $1.00 each; 12 for $9.00; breeders, $5.00 to $10.00 each; nuclei and full colonies ready June 1; 2-fr., $2.50; 8-fr., with queen, $8.00; 10-fr., with queen, $10.00; 1-lb. package of bees, no queen, $1.50; 2-lb., no queen, $2.75; 3-lb., no queen, $3.75. Pounds of bees and queens ready April 1.
Curd Walker, Queen-breeder, Jellico, Tenn.

FOR SALE.—Three-band Italian bees and queens. We quote without queen, as follows:—Three-frame nuclei, $2.25; two-frame nuclei, $1.75; one-frame nuclei, $1.25; three pounds bees, $3.25; two pounds bees, $2.25; one pound bees, $1.50. If queen is wanted with bees add price of queen wanted. Young untested queens, $.75; young tested queens, $1.00. Our bees and queens last year gave general satisfaction, and this year we are in position to give stronger nuclei with a greater per cent brood than we did last year. If it is a bargain you are looking for, send your order this way. We are now shipping bees and queens daily. Bees are all in standard hives, Hoffman frames, wired, and full sheets foundation. We guarantee bees to be free from disease.
The Hyde Bee Co., Floresville, Texas.

BEES FOR SALE.—On account of the poor health of one of my sons, we shall have more bees the coming season than we can handle. The bees are all pure Italian, with good young queens—descendants of the famous Moore strain. They are in nearly new Langstroth hives, on good wired combs, built on foundation; are free from disease. I will sell about 100 colonies, price in 10-frame hives, $7.00 a colony; in 8-frame hives, $6.00. Orders may be sent at any time; the bees will be shipped about June 1. Elmer Hutchinson, Lake City, Mich.

Golden 3-band Italian and Carniolan queens: Virgin: 1, 50c; 6, $2.50; 12, $4.00; 100, $25.00. Untested: 1, 75c; 6, $4.20; 12, $7.80; 100, $60.00. Select untested: 1, 85c; 6, $4.80; 12, $9.00; 100, $70.00. Tested: 1, $1.00; 6, $5.40; 12, $10.20; 100, $80.00. Select tested: 1, $1.25; 12, $13.80; 100, $100. Breeders: $3.00 each. Bees in combless packages: ½ lb., 75c; 1 lb., $1.25; 2 lbs., $2.25. Nuclei: 1-frame, $1.25; 2 frames, $2.25; 3 frames, $3.00. Add price of queens wanted. We guarantee safe arrival and no disease.
C. B. Bankston, Buffalo, Tex.

MISCELLANEOUS

Quality Dahlias (northern grown). Send for catalog. Mrs. E. L. G. Davis, Rt. 2, Newton, N. H.

BASSWOOD TREES.—All sizes; send for list.
W. M. Hansen, Jr., Niles, Mich.

HELP WANTED

WANTED.—Man to work with bees 6 months or more. State age, experience, and wages.
W. J. Stahmann, Clint, El Paso Co., Texas.

WANTED.—Help in beeyards. State age, experience, and wages wanted, in first letter.
Mathilde Candler, Cassville, Wis.

WANTED.—Man to work with bees, season 1917. State age, experience, and wages.
The Rocky Mountain Bee Co., Billings, Montana.

WANTED.—Co-operative apprentice in production of extracted honey—up-to-date outfit; also some work on a small farm, new land.
O. H. Townsend, Lake City, Mich.

WANTED.—Active man with some experience to help in bee and queen yards. Board furnished. State wages wanted.
W. A. Latshaw Co., Clarion, Mich.

WANTED.—Industrious young man, fast worker, as a student helper in our large bee business for 1917 season. Will give results of long experience, and board and small wages. Give age, weight, experience, and wages in first letter.
W. A. Latshaw Co., Clarion, Mich.

WANTED.—Young man with a little experience, fast willing worker, as student helper with our 1000 colonies. Crop for past two years, 6 carloads. Will give results of our long experience and small wages; every chance to learn. Give age, height, weight, experience, and wages, *all* in first letter, or expect no answer. E. F. Atwater, Meridian, Idaho.

SITUATION WANTED

Position wanted by young man of 18 with some practical beekeeper in Wisconsin or nearby states. Has no bad habits; a fast and willing worker about bees; has had some practical experience with bees in the production of comb and extracted honey, also in the rearing of queens. State what wages you will pay and what knowledge may be gained.
J. O. Eggers, Eau Claire, Wis.

CONVENTION NOTICES

LEGAL NOTICE.

The Texas Honey-producers' Association, with main office at San Antonio, Texas, hereby gives notice of the organization as a limited partnership. It is organized with the intention of incorporation under the laws of the State of Texas, for the business of purchase and sale of honey, beekeepers' supplies, cans, and appliances used in the production and sale of apiarian products. The liability of any member may be learned upon application to E. G. LeStourgeon, Secretary, P. O. Box 1048, San Antonio, Texas.

A field meeting of the beekeepers of southeastern Iowa is being planned, to be held at Fairfield, Ia., May 9. C. P. Dadant, editor of the *American Bee Journal,* has promised to be present, and several other noted beekeepers have been asked to be on the program. A question-box will be one of the prominent features of the meeting. All beekeepers from far and near are invited. Fairfield is on two of the main railroads of Iowa—the C. B. and Q., and the Rock Island. The forenoon trains on the 9th will be met. The meeting-place will be the Samuel Lewis meat market. Meeting will be held in a hall near by. Samuel Lewis, L. W. Elinore, J. I. Danielson, of Fairfield, and J. W. Stine, Stockport, Committee.

The sixth annual field day of the Toronto Beekeepers' Association will be held this year at the Ontario Agricultural College, Guelph, May 24—Empire Day.

The object of these field days is to educate the beekeeper by practical demonstration in the apiary to better and improved methods of beekeeping; bring home to each and all the importance of exchanging ideas, and seeing at first hand the methods of operation of successful apiarists. The field-day demonstration for this purpose is ideal; and wide-awake beekeepers are alive to this fact, as is shown by the increased attendance from year to year. Under the splendid management of the provincial apiarist the Ontario Agricultural College is taking the lead in things apicultural; and the Toronto beekeepers, by selecting the very center of beekeeping as their place of meeting, are making a strong appeal to all beekeepers — our American allies especially — not only to be present on this our Empire Day celebration, but to swell the ranks by inviting their friends to spend "the day" with them. Every beekeeper within reach, it is hoped, will feel a personal responsibility in helping to make this national field day the greatest and best ever. It goes without saying, that the program will be first class. Mr. Pettit, with wide experience in such matters, is in charge of this department, and we are confident all who are fortunate enough to be present will go away delighted. The Wellington County Association will provide tea and coffee, while the visitors will bring their lunch-baskets.

Now, beekeepers, this is your opportunity—a great occasion, a great place, a great program. Let it be a great and enthusiastic meeting.

G. R. Chapman, President.
P. Temple, C. V. Clubb, Secretaries.

TRADE NOTES

We have on hand a few Bingham honey-knives slightly rusty. Price 50 cts. each as long as they last. Postage extra forwarded by mail.

CATALOG OF MAY 1.

As we required an additional supply of catalogs to provide for current inquiries we took occasion to incorporate most of the changes in price which have occurred since Jan. 1, and have dated these May 1 on the title page. The changes in price, some of which are effective this date, and some earlier, are as follows: Advance of 5 cts. per pound on comb foundation, made Feb. 20; zinc honey-boards were advanced 4 cts. per 100; zinc sheets to $4.00 each; Alexander honey-strainers to $4.50 each; and gasoline and oil stove marked up 50 cts. each; Townsend uncapping-box to $20; also a further advance in comb-foundation mills was made April 1. The following additional advances in honey-extractors and other metal goods are made effective May 1: Two-frame Novice and Cowan extractors are marked up $1.50 each; four-frame Novice and 72018 Cowan extractors $2.00 each; four-frame Root automatic are advanced $4.00 each; the six-frame $5.00 each, and the eight-frame $6.00 each. Honey-storage tanks are advanced $1.00 each, excepting the smallest size, to which 75 cts. is added.

The Coggshall bee-brush has been marked up from 20 cts. to 30.

The prices on tin cans and pails are withdrawn, and we quote no prices beyond what stock we have available to furnish. Our Los Angeles and San Francisco offices are protected till July 1, and are prepared to supply cans in carload lots or less. We are not so fortunate here, and the factories generally have all they can do in taking care of parties with whom they have contracts, and will not accept any new business at any price. We have a limited supply which will care for ordinary requirements for several weeks; but on anything further we shall have to quote on whatever we find available when your inquiry is received. Beekeepers who have not yet bought or contracted for their supply of empty cans for shipping their honey when produced may find great difficulty in getting a supply when needed. We advise you to get in line before it is too late. Some factories have orders to keep them busy for four to six months, running night and day.

BEESWAX MARKET.

We are quoting a further advance of two cents a pound on beeswax, and offer, for prompt shipment, 36 cents cash or 38 in trade, delivered at Medina. We have wax enough to keep us going till June, but need ten to twenty tons for use beyond that date. Freights are very slow, and we advise that shipments be forwarded this month to secure this price. If another raise in price should be necessary to keep in touch with the market we shall, at the same time, be compelled to make another advance in the price of comb foundation. We should like to avoid this if possible.

GLASS JARS FOR HONEY.

Because of the advancing prices of glassware and the increasing difficulty of obtaining various styles at all, we have dropped out of our catalog for 1917 all but the six-ounce tumbler and one-pound round jar which we were able to contract for as needed. We still have in stock at Medina, as well as at our branches, more or less of the styles formerly listed which we shall be pleased to close out at former prices while they last. We give a list here of what we have in stock at Medina, with the price of the same, and will try to give in our next issue a list of stock at our branches. These are bargains at old prices on today's market, and should be taken quickly. They could not be replaced at these prices.

18 cases ½-lb. taper-panel jars, 24 to case, 90c case; 6 for $5.10; 80c per case for lot.

75 cases 1-lb. taper-panel jars, 24 to case, $1.10 case; 6 for $6.30; 95c per case for lot.

30 cases ½-lb. tip-top jars, 24 to case, $1.00 case; 6 for $5.70; 90c per case for lot.

42 cases 1-lb. tip-top jars, 24 to case, $1.10 case; 6 for $6.30; $1.00 per case for lot.

8 crates 1-lb. tip-top jars, 144 to crate, $5.50 per crate; $5.25 per crate for lot.

39 cases 1-lb. Federal or Simplex jars, 24 to case, $1.10 per case; 6 for 6.30; $1.00 per case for lot.

5 cases ½-lb. square jars with cork, 144 to case, $4.00 per crate; $3.75 per crate for lot.

7 cases 1-lb. square jars with cork, 72 to case, $2.50 per crate; $2.40 per crate for lot.

30 cases 1-lb. square jars with cork, 24 to case, $1.10 per case; $1.00 per case for lot.

24 cases ¼-lb. Hershiser jars with aluminum cap, 24 to case, at 75c per case; 70c per case for lot.

Some of the one-pound square jars may have glass top with rubber-band and spring-top fasteners, same style as the tip-top jar. These are usually worth 75 cts. a gross more than the jars with cork; but we will supply what we have at regular price with cork.

EIGHT-FRAME DEEP SUPERS NAILED.

We have to offer about 140 eight-frame supers, 5⅝ inches deep, nailed and painted, which have been used once with shallow extracting-frames. We offer these empty, without frames, at 30 cts. each; or, including frames KD, at 50 cts. each. These prices are much below our regular prices on new goods, and these are practically as good as new, as they bear very few marks of use.

RAUCHFUSS SECTION-PRESS AND FOUNDATION-FASTENER.

We have a supply of the latest pattern of this device which has become quite popular thruout the west. It is a combined machine for folding sections and fastening the foundation starter at the same handling. Price, delivered anywhere, $4.00 each. If shipped with other goods you can have one for $3.50.

BUCKEYE DOUBLE-WALLED HIVES.

These hives are having a phenomenal sale this season, as our large stock, prepared in anticipation of reaching thru the season, is about gone already. While we do not advertise to furnish these hives in the 8-frame width we have had occasional calls for this size. In anticipation of these calls we have some stock made up whch we offer, to close out, at special price. Of the latest style, with loose bottom, we offer 18 crates of 5 each, one-story, with cover, bottom, and frames, at $12.00 per crate; 5 crates at $11.00, or the lot at $10.00 per crate. Of the older style, with tight bottom, we have 7 crates of one hive each at $2.50 per crate, and 7 crates of five each offered at $11.00 per crate, or the lot of 42 hives for $80.00.

HOFFMAN FRAMES WITH 19-INCH MOLDED TOP-BAR.

We have 19 crates, of 100 each, Hoffman frames, with the old-style molded top-bar, 19 inches long, which we offer, to close out, at $3.00 per 100; $50.00 for the lot.

CHIPPED TUMBLERS.

We have accumulated about 200 cases of 6 oz. tumblers, slightly chipped, which we offer at 20 cts. a case, including plain tin caps. There are 2 dozen to the case, and they will answer nicely for local use where you do not have to ship.

SECOND-HAND FOUR-FRAME NOVICE EXTRACTOR.

We offer for sale for shipment from Weston, Mich., a four-frame Novice extractor for regular Langstroth size of frames. The machine has had only moderate use, and is in good condition. It was turned in toward a larger machine. A new machine of this size lists now at $22. We offer this for $14, subject to previous sales.

SIXTY-POUND CANS FOR HONEY.

Just as we go to press we are closing a contract for five cars of honey-cans. If you have not yet secured or contracted your supply for the season let us hear from you with an estimate of your probable requirements, and get our prices. While we are taking some chance in tying up this quantity, we believe you are taking a bigger chance of not getting what you need if you do not make your plans well in advance of your actual requirements.

SECOND-HAND FOUNDATION-MILLS.

We still have for sale the following second-hand foundation machines which will serve a good purpose for those who want to make up their own foundation. We can submit a sample from any mill to those interested, on application.

No. 0156, 2½ x 6 hexagonal extra thin-super mill in fair condition. Price $10.00.

No. 0165 2½ x 6 hexagonal extra thin-super mill in fair condition. Price $10.00.

No. 0237, 2½ x 6 thin-super mill in fair condition. Price $10.00.

THE A. I. ROOT CO., Medina, O.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, REQUIRED BY THE ACT OF AUGUST 24, 1912.

Editor, E. R. Root, Medina, Ohio; Managing Editor, H. H. Root, Medina, Ohio; Business Manager, J. T. Calvert, Medina, Ohio; Publisher, The A. I. Root Co., Medina, Ohio.

Owners: The A. I. Root Co. Stockholders holding 1 per cent or more stock as follows:

A. I. Root, Medina, Ohio; E. R. Root, Medina, Ohio; H. H. Root, Medina, Ohio; A. L. Boyden, Medina, Ohio; L. W. Boyden, Medina, Ohio; J. T. Calvert, Medina, Ohio; Frank Spellman, Medina, Ohio; H. E. Aylard, Gdn., Medina, Ohio; A. A. Bostwick, Seville, Ohio.

There are no bondholders, mortgagees, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities.

(Signed) E. R. ROOT, Editor.

Sworn to and subscribed before me this 3d day of April, 1917.

(Signed) FRANK SPELLMAN,
[Seal] Notary Public.
(My commission expires Feb. 17, 1920.)

A KIND WORD AND ALSO SOMETHING ABOUT DEAF-MUTES.

A. I. Root:—Like others of the GLEANINGS family I feel that I know you, altho I have never met you, and on the strength of that I am going to write and tell you how your Home talk in GLEANINGS for Dec. 15 appealed to me.

My oldest brother, at the age of three years, lost his hearing; and, on account of his slight knowledge of speech, and partial loss of that faculty, he lost it. From that time his bringing-up was a problem for my parents. I learned the deaf alphabet at an early age, and that was the only way we had of communicating with him. He is a printer by trade, and has charge of the makeup stone for one of the largest printing-offices in Minneapolis, and earns $25 a week.

There are several mutes in town who drive their own cars, and this winter there was dedicated to the use of the mutes of the two cities of St. Paul and Minneapolis a memorial hall midway between the two cities at a cost of $80,000, a gift of a wealthy mute who died last year, and who made provision for it in his will.

If I am not mistaken, nearly all the storm-sash in the country are hung on hangers invented by Anton Schroeder, also a mute of this city, who also drives his own car.

My brother's wife is also a mute, while both his children hear and speak. The boy married a mute, and has a position as chauffeur for a large wholesale drug house.

Quite a few of the mutes own their own homes; and, while only a few of them are wealthy, still there are none of them but that would resent being called poor, and all of them are self-supporting.

My little girl, six years old, has learned the hand alphabet, and it pleases my brother greatly to have her talk to him.

I will send you a card with the alphabet on; and if you learn it you can surprise your friend in Cleveland by spelling to him on your hands.

I am going to send for several copies of Dec. 15th GLEANINGS, and send them to my mute friends.

I often think of you, and wish I could meet you and have a long talk with you.

My father died last August lacking 18 days of being 76 years old. He would have gone under long ago had he not done as you have often urged in your health talks, by being bright and cheerful, keeping up his nerve, and never complaining, even tho he was far from being well. H. G. BRANT.

St. Paul, Minn., Jan. 11.

DEAF MUTES; WHAT IS BEING DONE FOR THEM?

Seeing your account of Mr. Neillie and wife, also the running and vibration of the car, etc., I will say John W. Overstreet, of Little Hickman, Jessamine Co., Ky., can play a bassviol. He is a deaf-mute, and was educated at the mute college at Danville, Ky. I think he would write you an account of *how* he does it if you care to publish it, as it serves to show what a man can do if he tries, and why a lot of us should do better. HANSTON SCOTT.

New Richmond, Ohio, Dec. 21, 1916.

Dear Brother Root:—I just read your sermon in the Oct. 1st issue, and I want to give you one good loud *amen* to that sermon. It does my soul good. Do you remember a few years back a poor "shutin" from nervous prostration wrote you in regard to health, and you sent him T. B. Terry on "How to Keep Well and Live Long;" and you sent a personal reply, and said, "I shall pray for you, and I shall expect results;" and, Brother Root, I am the man. I have prayed and trusted, and followed Terry, and had confidence that you were wrestling with the dear Lord in my behalf till relief or *results* have come, "Praise the Lord." For 32 years I have been a shutin, and suffered all the tortures of a nervous wreck, and all the privation of a shutin life. Well, for the past few weeks I have taken two little trips from home—one about 8 miles, the other about 30 miles; and to say I enjoyed it is putting it mildly.

I am now superintendent of a Sunday-school near my home, and it is doing well. Oh that we had more praying, trusting children of God in the world like yourself! A. A. MCMILLAN.

Atlee, Ark., Oct. 7.

TREASURE ON EARTH AND TREASURE IN HEAVEN.

The sample of honey-candy is received, and is certainly very delicious. I wish to thank you for the jar of honey received today. The new-style cover is a great improvement over the old, which I had to cut open with a can-opener. Your honey was our dessert for dinner tonight; and, besides the pleasure of eating it, there was also enjoyment in the thought that a portion of the profits go into the Lord's treasury. You see we feel a bit acquainted with Mr. A. I. Root since references to him and the Airline honey have appeared in the *Sunday School Times*.

Rochester, N. Y., Oct. 14. FLORA L. BUTLER.

EIGHTY-FOUR AND BLIND, LOVES HOME PAPERS.

Dear Sir:—Tho I keep no bees, I have taken GLEANINGS for several years, chiefly for the Home papers, which my mother (nearly 84 years old, and blind almost two years) and I enjoy very much. We also like to read of your southern home and poultry experiments. Wishing you and your good wife "Sue" many more years of happiness and usefulness I am Yours truly,

Portland, Ind., March 19. MISS MYRTLE LOTZ.

"BETTER MEN AND BETTER MORALS."

Every article that pertains to beekeeping is eagerly awaited, for these come from men who know; but I invariably turn to the Home department first. There are many who can help us out in matters pertaining to bee culture, but very few who can present truths that go to the making of better men and morals, as they are presented by the editor of the Home department. JOHN R. LOCKARD.

Enid, Pa.

PATRIOTISM, SOCIALISM, AND THE BIBLE.

May God bless you for what you said in GLEANINGS about "patriotism." We have always said the same, and were called anarchists, etc. You say that Socialists are never happy. Is it any wonder? We never did one evil thing; have always believed just as the Bible teaches; but we are lied about, sworn about, and ridiculed; yet we are never happier than when fighting evil, and, in spite of all, *"watch us grow."*

Sharpsville, Pa., Sept. 7. ROBT. C. ONSTOTT.

"PREPAREDNESS;" A SUGGESTION.

In GLEANINGS for April 1, in Our Homes, the discussion of preparedness interests me. I dislike the idea of war, I believe, as much as any one; but I cannot help thinking of Belgium's unpreparedness and Switzerland's preparedness. In preparedness I do not favor a standing army, like Germany, but an individual and national preparedness like Switzerland—every man at a moment's notice the nation's defense without a military class.

Ialla, Wash., April 13. A. T. COPELAND.

A German-American Friend?

Have you a German friend or neighbor who is a beekeeper?

If you have, do you want to do him a kindness and lend a hand?

We chance to know that there are a good many German beekeepers in this country who would like an American work on bees printed in German, but they don't know where to get it.

We have such a book, "A B C der Bienenzucht," 500 pages, which is a German translation of our A B C and X Y Z of Beekeeping, edition of 1907. There is nothing like it nor equal to it for the German-American beekeeper. We are going to sell what we have left of this German edition at a big sacrifice—at just half price; namely, $1.00 for the paper-cover edition; $1.25 for the cloth-bound edition, postpaid. Some of these books are a little shelf-worn, but only a very little. The translation revision was done by Mr. Fried. Greiner, a German, and well-known bee authority. The book may prove invaluable to your German neighbor.

Will You Tell Him?

If you will do so, and if you or he will write us, sending the half-price at which we now offer this book, we will send it postpaid by return mail, and you will have done a service and kindness to a neighbor who is handicapped as you are not. We shall also appreciate your kindness in helping us make these books of service.

The A. I. Root Co., Medina, Ohio

Mr. Beekeeper

Have You Seen It?

The article beginning on

Page 692

of the new edition of

The ABC and XYZ of
Bee Culture

If you have even five colonies of bees this article alone will save you several times the price of the book. This is merely one of the many valuable articles which you can't afford to miss.

Prepaid to any address in the United
States for $2.50. Send to our nearest
branch office and save time.

The A. I. Root Company
Medina, Ohio

New York
Chicago
Philadelphia
Des Moines
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San Francisco
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Indianapolis
Washington

LEWIS SECTIONS

have

Individuality

BECAUSE they are in a class by themselves. They are not like other sections. Very rarely do they break in folding—in fact, one of our customers writes us that he has put up (folded) thirty thousand Lewis sections in a season and had not found one section in the whole lot that was not perfect. Beekeepers everywhere, no matter what their preference may be for hives or other bee equipment, agree when it comes to sections that Lewis sections are supreme. This is—

BECAUSE the material which goes into a LEWIS SECTION is of the right kind, especially selected for the purpose. The stock is assorted and re-sorted, the discolored stock thrown out, leaving only the whitest material to go into LEWIS SECTIONS.

BECAUSE the V groove, which is the most important process in the manufacture of a section, is made just right. In the LEWIS SECTION it is cut just deep enough so that the section will not break in folding. The LEWIS SECTION expert has been supervising the manufacture of LEWIS SECTIONS for over thirty years.

BECAUSE the finishing of the section is given the utmost care. The LEWIS SECTION is polished on both sides in a double-surfacing sanding machine designed in the Lewis plant especially for this purpose. It insures the uniform thickness of each and every section. The dovetailing of the ends is smooth, clean, and just right.

BECAUSE, even after LEWIS SECTIONS are completely manufactured, the packing is considered a very important part of the marketing. All LEWIS SECTIONS are put up in regular standard packages containing a good full count. A tight wooden box is used, entirely enclosing the contents so that no discoloration from air can occur, no matter how long the sections are carried in stock. The package is also strongly braced at all corners, insuring delivery to you in good order.

AT THE SAME PRICE YOU PAY FOR OTHER STANDARD MAKES OF SECTIONS YOU GET ALL OF THE ABOVE WHEN YOU BUY LEWIS SECTIONS.

Insist on Lewis Sections. Look for the Beeware Brand.

G. B. Lewis
Company

BEWARE
WHERE YOU BUY YOUR
BEEWARE
WIS.
MAKES THE FINEST.

Watertown,
Wis.

Order from your nearest distributer

Gleanings in Bee Culture

Right
in
Clover

Vol. XLV June, 1917 No. 6

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you SPOT CASH for any thing you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

ALL QUEENS SOLD TO JUNE 1 . . . After that we supply them at

Untested, . . .	1, $ .75	12, $8.00	100, $60.00
Tested, ...	1, 1.25	12, 12.00	100, 90.00
Select Tested, . .	1, 2.00	12, 20.00	

We can supply either the imported or domestic strain of the three-banded Italian.
Neither can be beaten. Write for circular telling more about them.
Pure mating, safe arrival, and satisfaction guaranteed.

R. V. Stearns, ... Brady, Texas

Southern Headquarters for Three-banded Italian Queens

To supply the increasing demand for our queens we are now running nearly twice as many mating boxes as last year, and six times as many as six years ago. We spare neither labor nor money to produce the very best that can be had. We are careful about our breeders for producing our queens and drones. We use the best methods to produce the best queens.

Untested queens, ...	June, 1, $ .75;	12, $ 8.00;	100, $ 60.00	July, 1, $ .60;	12, $ 7.00
Tested queens	June, 1, 1.20;	12, 14.00;	100, 115.00	July, 1, 1.05;	12, 12.00
Select tested queens . .	June, 1, 1.90;	12, 22.00;	100, 180.00	July, 1, 1.75;	12, 19.25

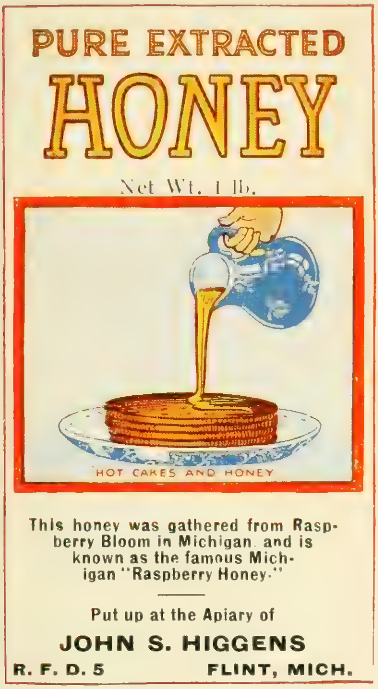
Very best queens for breeders, $3.00 each.

If any of our untested queens prove to be mismated we are willing to replace them free of charge. No foul brood has ever been in our vicinity. Safe arrival and satisfaction I guarantee.

W. D. Achord, Fitzpatrick, Alabama

Our New Honey Labels

(Also see last page of this issue)



PURE EXTRACTED

HONEY

Net Wt. 1 lb.

This honey was gathered from Raspberry Bloom in Michigan and is known as the famous Michigan "Raspberry Honey."

Put up at the Apiary of

JOHN S. HIGGENS

R. F. D. 5 FLINT, MICH.

No. 1

NO. 1.—HERE IS A LABEL which will sell your honey. It creates a desire for the clear golden fluid by appealing to man's stomach. It is especially designed for small jars holding about a pound of honey, or for Mason quart jars. All ungummed.

Prices—Special for 30 days:

No. 1, in lots of 100	$1.00
500	2.25
1000	4.00

Note:—Option may be had on the wording printed in black.

Prices include special printing.

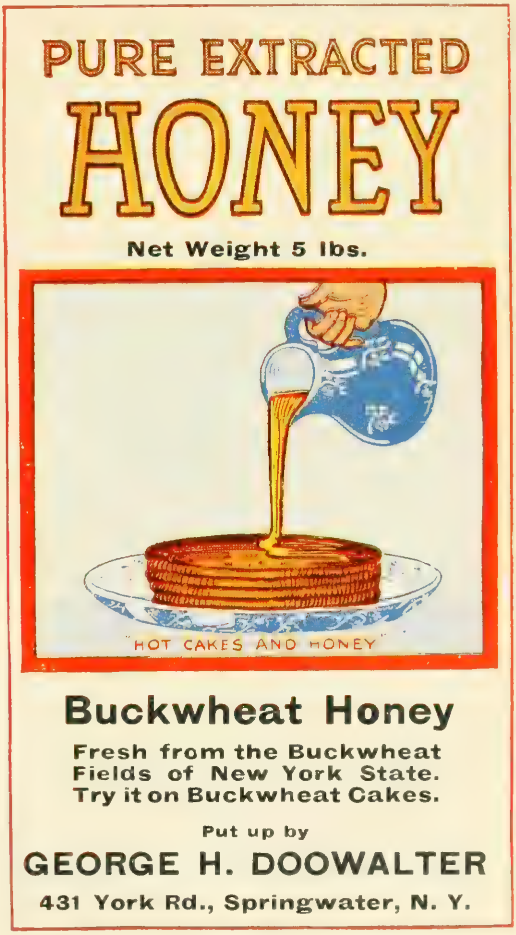
NO. 2.—Like No. 1, this label is merely made larger to be used on 5-gallon pails, half-gallon cans, or jars holding more than a quart, such as the Mason 2-quart jar. It can be readily seen from the grocers' shelves, and when used on a jar of good extracted honey will invariably boost the selling price at least ten cents above a like jar of honey without a label. All ungummed.

Prices—Special for 30 days

No. 2 in lots of 100	$1.25
500	2.50
1000	5.00

Note:—Only the wording printed in black can be changed to suit the customer. Prices include special printing.

For still larger size label of this design, see next page.



PURE EXTRACTED

HONEY

Net Weight 5 lbs.

Buckwheat Honey

Fresh from the Buckwheat Fields of New York State. Try it on Buckwheat Cakes.

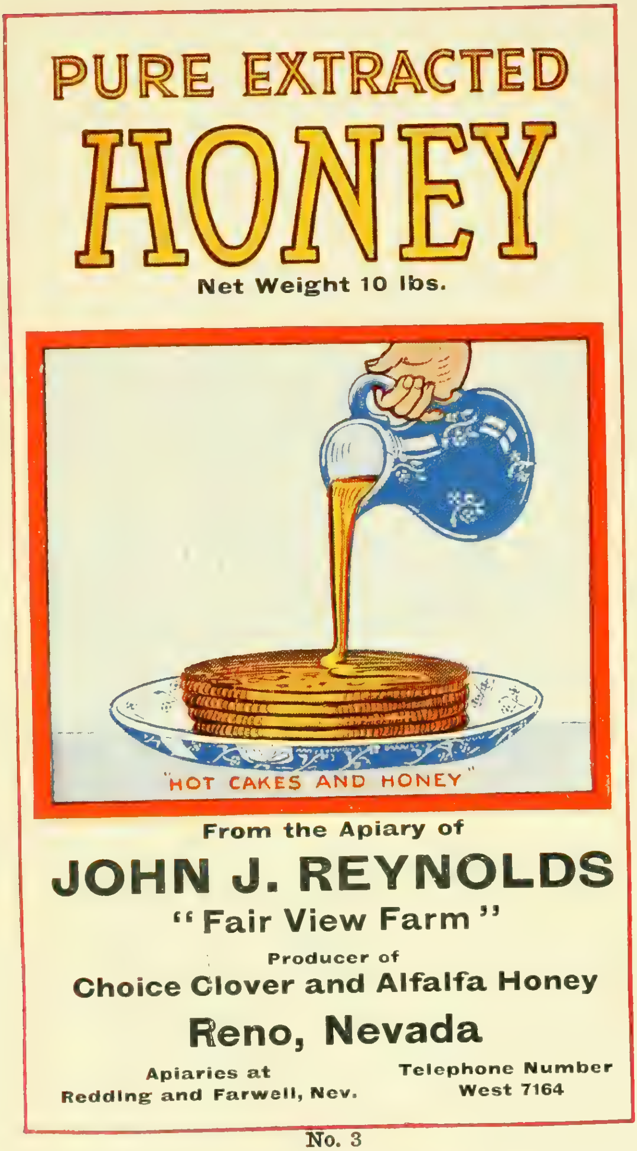
Put up by

GEORGE H. DOOWALTER

431 York Rd., Springwater, N. Y.

No. 2

Send Your Order to THE A. I. ROOT CO., MEDINA, OHIO, before July 1 for Special Prices.



PURE EXTRACTED
HONEY
Net Weight 10 lbs.

"HOT CAKES AND HONEY"

From the Apiary of
JOHN J. REYNOLDS
"Fair View Farm"
Producer of
Choice Clover and Alfalfa Honey
Reno, Nevada
Apiaries at
Redding and Farwell, Nev.
Telephone Number
West 7164

No. 3

NO. 3. — THIS IS THE largest size of the "Hot Cakes and Honey" label, and is designed for the 10-lb. pail or for the 1-gallon can. Where honey is sold in tin it is most desirable that a neat and appetizing label be used, since the customer can not see the honey as when sold in a glass container.

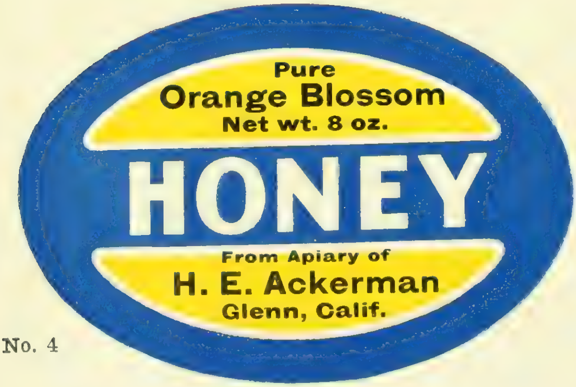
If you have any difficulty selling your honey in the local market, just try this label. (Ungummed).

Prices—Special for 30 days

No. 3, in lots of 100	$1.00
500	3.00
1000	5.50

Only the wording printed in black can be changed.

Prices include special printing.



Pure
Orange Blossom
Net wt. 8 oz.
HONEY
From Apiary of
H. E. Ackerman
Glenn, Calif.

No. 4

NO. 4 IS A LABEL especially designed for small tumblers or jars of less than a pound capacity. Part of the blue margin is cut off by the die which trims the label. If so desired, this label may be had with white margin, — square edges, instead of the oval. (Ungummed.)

Prices—Special for 30 days

	Oval	Square
In lots of 250	$1.50	$ .75
500	2.50	1.50
1000	4.50	2.50

The wording can be changed to suit except the line, HONEY.

Prices include other wording.

CONTENTS

JUNE, 1917

Editorial 427
Success after Failure .... E. R. Root 433
Breed from the Best .... Dr. C. C. Miller 436
Drone-cells One Side, Worker the Other .... Dr. C. C. Miller 438
Can This be Done? .... The Editors 439
Conversations with Doolittle .... G. M. Doolittle 440
Letters from a Beekeeper's Wife .... "Mary" 441
Concrete Workshop and Honey-House .... T. J. Riggs 441
Fruit and Vegetables Canned in Honey .... Elizabeth Little 443
A Large Swarm-catcher .... J. H. J. Hamelberg 444
Screened Openings in Floor Board .... G. T. Whitten 445
What to Do with Swarms Galore .... D. J. Blocher 446
Bees, Boys, and War .... R. F. D. 449
To Find the Hive the Swarm Came From .... Geo. W. Strangways 449
Instantaneous Increase .... J. M. Donaldson 450
No Swarming in a Swarm-mad Locality .... D. Pride 451
Stray Straws .... Dr. C. C. Miller 452
Siftings .... J. E. Crane 453
Our Food Page .... Stancy Puerden 454
Beekeeping as a Side Line .... Grace Allen 455
Around the Office .... M. A. O. 456
Beginners' Lessons .... H. H. Root 457
Just News .... The Editors 460
Gleaned by Asking .... E. R. Root 462
Mother Bee Nursery Rhymes .... M. G. P. 463
Gleanings from the North, South, East, and West .... Dept. Editors 464
Heads of Grain from Different Fields 470
Our Homes, Health Notes, Gardening, Temperance .... A. I. Root 475-482

SUBSCRIPTION RATES.—One year, $1.00; two years, $1.50; three years, $2.00; five years, $3.00. Canadian subscription, 30 cents additional per year, and foreign subscription, 60 cents additional. **DISCONTINUANCES.**—On and after March 1, 1917, all subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name that appears on the paper. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order or check. **CONTRIBUTIONS** to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

(Entered as second class mail matter at the Postoffice at Medina, Ohio.)

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

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Bee Supply Department

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Our Warerooms are loaded with
Lewis Beeware.
Every thing at factory prices.
Send for Catalog.

Wax Rendering Department

We do perfect wax rendering. It will pay every beekeeper to gather up all his old comb and cappings and ship to us. We charge 5c a pound for the wax we render, and pay the highest cash or trade prices.

The Fred W. Muth Co.
The firm the Busy Bees work for
204 Walnut Street . . . . Cincinnati, Ohio

HONEY MARKETS

BASIS OF PRICE QUOTATIONS.

The prices listed below, unless otherwise stated, are those at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

NEW YORK.—Comb honey is well cleaned up, but there is still a fair demand for No. 1 and No. 2 fancy white at around 13 to 14 cts. per pound, according to quality and quantity. There is no demand at all for lower grades. Extracted honey is in good demand, and very few stocks on the market at this time. The new crop is beginning to arrive now quite freely from the South, and finds ready sale, prices ranging from 90 cts. to $1.25 per gallon, according to quality. Beeswax is steady; prices from 40 to 42. Hildreth & Segelken.
New York, May 17.

SYRACUSE.—While there is no active demand for honey, a limited amount is moving. The dealers are generally pretty well closed out of stock, and the producers have nothing to offer until the new crop arrives. We quote extra fancy comb honey, per case, $4.32; fancy, $3.84; No. 1, $3.60; No. 2, $3.00. White extracted honey brings 12½; light amber, in cans, 10.
Syracuse, N. Y., May 17. E. B. Ross.

ALBANY.—No demand for comb honey. We make an occasional sale at 10 cts. per section, regardless of quality and weights. Considerable comb is to be carried over; extracted is cleaned up.
Albany, N. Y., May 19. H. R. Wright.

BUFFALO.—Demand is very light; no white No. 1 honey is offering in this market. Dark buckwheat honey is still offering fairly free. We quote No. 1 dark comb honey, 12 to 13; No. 2 dark, 10 to 12.
Buffalo, N. Y., May 17. Gleason & Lansing.

PHILADELPHIA.—Nothing special to quote at this time. Entirely cleaned up on all extracted honey, as also under-grade comb. We are offering fancy comb at 18 to 20 cents as to quality. Trade quiet. We quote clean average yellow beeswax at 38 to 40. Chas. Munder.
Philadelphia, Pa., May 17.

BOSTON.—Market is well cleaned up on extracted. Comb is cleaning up well. New orange-bloom extracted just coming in. We quote extra fancy comb honey, per case, $3.50; fancy, $3.20; No. 1, $3.00; No. 2, $2.75; light amber extracted honey, in barrels, 12, orange bloom.
Boston, Mass., May 19. Blake-Lee Co.

CLEVELAND.—Our market is about cleaned up on comb honey. Very little of any grade now here. Demand is very light, as is always the case at this season of the year. A little sample of new Florida honey arrived a few days ago, but no price is put on it yet. We quote fancy comb honey, per case, $3.75 to $3.90; No. 1, $3.50 to $3.60.
Cleveland, O., May 18. C. Chandler's Sons.

DETROIT.—Comb honey is going slow at 17 to 18; supply is not large.
Detroit, Mich., May 17. F. P. Reynolds & Co.

FLORIDA.— Demand is brisk, supply liberal; quality the very best in years. We quote extra fancy, per case, $4.50; fancy, $4.00; No. 1, $3.00. Extracted honey, white (best orange bloom) brings 11 cts., f. o. b. here. Clean average yellow beeswax brings 37. S. S. Alderman.
Wewahitchka, Fla., May 17.

PITTSBURG.—Demand is very light—practically no change in prices and conditions from last report.
Pittsburg, Pa., May 5. W. E. Osborn Co.

PORTLAND.—Comb-honey demand is very light and stocks are about cleaned up. Extracted honey is in good demand, but scarce—only enough stock on hand to fill the local requirements. No extracted in producer's hands. Prospect for a good crop is very good at present. We quote extra fancy comb honey, per case, $3.50; fancy, $3.25; No. 1, $3.00; No. 2, $2.75. White extracted honey brings 9; light amber, in cans, 8; amber, 7. Clean average yellow beeswax brings 25 to 27.
Portland, Ore., May 11. Pacific Honey Co.

DENVER.—Comb honey is entirely cleaned up in this market; extracted honey also, except a small stock we need for our bottling requirements; have none to offer at present in 5-gallon cans. We decline to quote prices on new-crop honey for future delivery. Beeswax is wanted. For clean yellow we pay 38 cents cash and 40 in trade, delivered here.
The Colorado Honey Producers' Association.
Denver, Col., May 18. F. Rauchfuss, Mgr.

PHOENIX.—Conditions have improved since last report. Reports from nearby mesquite ranges are good, while now and then I receive reports showing an almost complete failure. However, from the rush for cases something must be happening or they would not order by wire. Some alfalfa has been extracted—light amber. Clean average yellow beeswax brings 33, mostly sold.
Phoenix, Ariz., May 17. Wm. Lossing.

TEXAS.—Shipments are expected to begin to move in about two weeks; only a light crop, but the best ever of catclaw honey. We quote fancy bulk comb honey, in 60-lb. cans, 11½; No. 1, half cent per pound rise for smaller sizes. White extracted honey, per lb., brings 9½. Clean average yellow beeswax brings 35. J. A. Simmons.
Sabinal, Texas., May 15.

ST. LOUIS.—With the exception of extracted honey there is very little honey moving at present. Extracted honey is in good demand, and stocks here are very low. We quote fancy comb honey, $3.00; No. 1, $2.75; No. 2, $2.50. Light-amber extracted honey, in cans, brings 9½ to 10; amber, in cans, 8½ to 9; in barrels 8. Clean average yellow beeswax brings 42½. R. Hartmann Produce Co.
St. Louis, Mo., May 17.

KANSAS CITY.—Market on extracted honey is very firm, and all dealers report a very light supply on hand. We quote fancy comb, $3.50; No. 1, $3.25; No. 2, $3.00. White extracted honey brings 12; light amber, in cans, 11; amber, in cans, 10. Clean average yellow beeswax brings per lb. 33 to 35.
C. C. Clemons Produce Co.
Kansas City, Mo., May 17.

CHICAGO.—As we are entirely cleaned up on honey, both comb and extracted, we find it difficult to quote prices, altho there is still a call for it. Beeswax brings 33 to 35 per lb., according to color and cleanliness.
Chicago, Ill., May 18. R. A. Burnett & Co.

LOS ANGELES.—Market is bare of extracted. New crop will come in as soon as the weather warms up; good local demand for the first fifteen cars. Comb remains easy, prices unchanged, but is expected to advance when old stocks are cleaned up. We quote extra fancy comb honey, per case, $4.25; fancy, $3.85; No. 1, $3.25; No. 2, $2.50. White extracted honey brings 12; light amber, in cans, 11; amber, 9. Clean average yellow beeswax brings 35.
Los Angeles, Cal., May 11. Geo. L. Emerson.

MONTREAL.—Stocks are light, demand quiet; prices firm. We quote extra fancy comb honey, per case, 19; fancy, 18; No. 1, 16; No. 2, 14; white extracted honey brings 14; light amber, in cans, 13;

in barrels, 12½; amber, in cans, 12; in barrels, 11½. Gunn, Langlois Co.
Montreal, Ont., May 18.

TORONTO.—There is practically no change in the market for honey in this city. Stocks are extremely small; and some lines of tins, such as 60's and 5's, are practically exhausted. With the higher price now being asked for pure fruit jams, honey will undoubtedly find a good sale when the new crop arrives.
Toronto, Ont., May 17. Eby-Blain Limited.

HAMILTON.—Honey in ten and five pound tins is selling well; 60-lb. tins are selling slow; comb honey selling fast. Beemen say it is hard to get tins of any size, and we ought to get busy after them. We quote fancy comb honey, $2.40; No. 1, $2.25. White extracted honey brings 14.
F. W. Fearman Co., Ltd.
Hamilton, Ont., May 17. McNab Street Branch.

SAN FRANCISCO.—We have no information as to honey at this time. Leutzinger & Lane.
San Francisco, Cal., May 14.

CUBA.—Light amber extracted honey brings $1.00 per gallon; amber, $1.00. Clean average yellow beeswax brings 40 cts. per lb.
Matanzas, Cuba, May 12. A. Marzol.

LIVERPOOL.—The honey market is steady, and buyers are waiting for offers of Chilian. Cuban sales on spot bring $19.20 to $21.60, per 100 lbs.; Jamaica, 100 casks sold at $23.28 to $25.20; some Spanish sold at $23.04 per cwt. Beeswax is dearer; 283 packages of all descriptions were offered and 126 sold. We quote Zanzibar yellow, slightly drossy to good, at $46.14 to $47.34. East Indian, bleached, fair to good, brings $44.94 to $46.14; unbleached ditto, dark to good genuine, $41.28 to $43.74 per cwt. Mozambique, drossy to good block, brings $41.88 to $46.86 per cwt.; ditto fair to good rolls, $46.26 to $47.34. Madagascar, dark to good palish, brings $43.74 to $46.62 per cwt. Abyssinian, rather drossy to pale, brings $44.94 to $47.34 per cwt.
Liverpool, Eng., May 4. Taylor & Co.

MEDINA.—In reporting the honey market at this time, we remind our readers of our report dated February 21, in which we said we believed the comb-honey crop would be well cleaned up, altho considerable was believed to be in producers' hands at that time. A careful survey of important markets recently, leads us to believe that there is very little old comb honey left, and the price has slightly improved. For old-stock white comb honey we are paying at present about 16 cts. for No. 1, and 18 for fancy. Of extracted honey there are practically no offerings at this time, and the market is largely speculative.
Medina, Ohio, May 23. The A. I. Root Co.

QUEENS
Best Italians, 50 cts. each; $5.50 per dozen. Virgins, 25 cts. each; $2.75 per dozen. Orders taken now filled in rotation after May 20. Any of my queens proving mismated replaced free. A. F. BRAY, Rt. 2, KELSO, TENN.

Singers If you want the latest and best peach of a song—soprano solo with piano accompaniment — send for "HOW WOULD YOU LIKE TO BE A SLAVE?" The song of the hour. Tersely American. Only 25 cents postpaid, silver or money order.
Address C. O. WEIDMAN, Medina, Ohio.

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Patent Counsel of The A. I. Root Co.
Chas. J. Williamson, McLachlan Building
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Wanted: Old Combs and Slumgum
For lowest freight rate bill as "beeswax refuse." Our steam process removes every ounce of wax. We render on shares.
Superior Honey Company, . Ogden, Utah

Northern-bred Italian Queens

Our queen-rearing apiary is in charge of Mr. M. H. Hunt, Redford, Mich. . We offer choice stock, and guarantee safe delivery. . . Orders filled in rotation as received.

Untested Italian Queens . . .	each.	$1.00;	three for	$2.75
Tested Italian Queens	"	2.50;	"	7.00
Select Tested Italian Queens .	"	3.00;	"	8.00
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Will give special rates on quantities on application.

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General Agents in Michigan for Root's Bee Supplies

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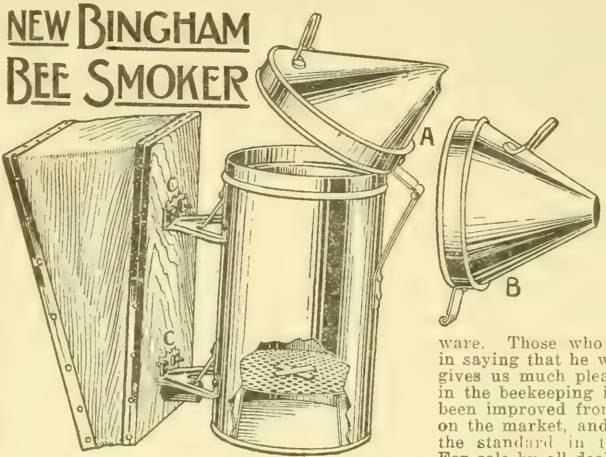
We carry a large and complete stock of bee supplies, and are prepared to give you prompt service. . We have just received several carloads of new fresh supplies. . . Send for our catalog.

C. H. W. Weber & Co., Cincinnati, O.

2146 Central Avenue

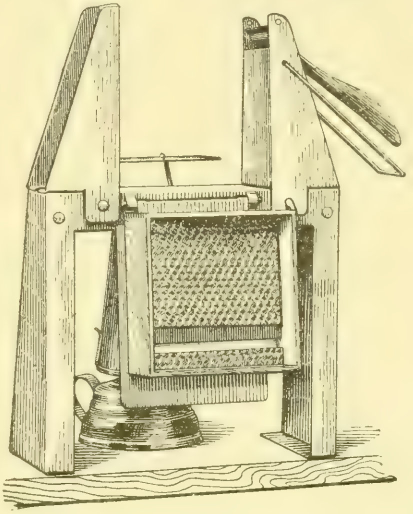
NEW BINGHAM BEE SMOKER



In 1878 the original direct draft bee smoker was invented and patented by Mr. T. F. Bingham of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey-knife for nearly thirty-five years; and in 1912, becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general beeware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men and it gives us much pleasure to help perpetuate his name in the beekeeping industry. Bingham smokers have been improved from time to time, are now the finest on the market, and for nearly forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.

Smoke Engine, 4-inch stove	$1.25
Doctor, 3½-inch stove	.85
Two above sizes in copper, 50 cts. extra	
Conquerer, 3-inch stove	.75
Little Wonder, 2½-inch stove	.50

Hinged cover on two larger sizes.
Postage extra.



Woodman's Section-fixer

A combined section press and foundation-fastener of pressed-steel construction. ONE OF THE GREAT ADVANTAGES this machine has over all others on the market, in the putting in of top and bottom starters is, YOU ALWAYS HANDLE LARGE PIECES OF FOUNDATION. You know how hard it is to set small narrow pieces for bottom starters. With this machine a large piece of foundation is set and the hot plate is again used to cut it off, leaving the narrow bottom starter. What is left of the large piece is then set for the top starter. Another advantage is the section always comes away from the machine right side up with the top starter, large piece, hanging down, and does not become loosened in reversing as with other machines.

Price of machine $2.50; with lamp, $2.75. Weight 5 lbs., postage extra.

Tin Honey-packages

A local wholesale house secured a carload of tin plate in September that was promised for April. Conditions are now even worse. When it is necessary to order tin plate a year or more in advance of the time it is wanted for use, advances in prices must be expected. The highest bidder will get the stock. Freight at this time is very slow and uncertain. Prices are liable to advance. It would be a wise thing to secure your packages for the 1917 crop. Our three-year contract is giving us some advantage over general market quotations. Send us a list of your requirements at once.

FRICTION-TOP TINS.

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	...	12	6
Crates holding	...	...	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

A. G. Woodman Co., Grand Rapids, Michigan

All Ready for 1917
Honey Crop

The season for surplus now begins. If you find you did not secure enough hives, sections, or foundation on your early order just send in an order any time you find you are in need and just see how quick you will receive it.

We intend here to help you so that a bumper crop will be credited to old New York State.

F. A. Salisbury, Syracuse, New York
1631 West Genesee St.

LEWIS SECTIONS

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Individuality

BECAUSE they are in a class by themselves. They are not like other sections. Very rarely do they break in folding—in fact, one of our customers writes us that he has put up (folded) thirty thousand Lewis sections in a season and had not found one section in the whole lot that was not perfect. Beekeepers everywhere, no matter what their preference may be for hives or other bee equipment, agree when it comes to sections that Lewis sections are supreme. This is—

BECAUSE the material which goes into a LEWIS SECTION is of the right kind, especially selected for the purpose. The stock is assorted and re-sorted—the discolored stock thrown out, leaving only the whitest material to go into LEWIS SECTIONS.

BECAUSE the V groove, which is the most important process in the manufacture of a section, is made just right. In the LEWIS SECTION it is cut just deep enough so that the section will not break in folding. The LEWIS SECTION expert has been supervising the manufacture of LEWIS SECTIONS for over thirty years.

BECAUSE the finishing of the section is given the utmost care. The LEWIS SECTION is polished on both sides in a double-surfacing sanding machine designed in the Lewis plant especially for this purpose. It insures the uniform thickness of each and every section. The dovetailing of the ends is smooth, clean, and just right.

BECAUSE, even after LEWIS SECTIONS are completely manufactured, the packing is considered a very important part of the marketing. All LEWIS SECTIONS are put in regular standard packages containing a good full count. A tight wooden box is used, entirely enclosing the contents so that no discoloration from air can occur, no matter how long the sections are carried in stock. The package is also strongly braced at all corners, insuring delivery to you in good order.

AT THE SAME PRICE YOU PAY FOR OTHER STANDARD MAKES OF SECTIONS YOU GET ALL OF THE ABOVE WHEN YOU BUY LEWIS SECTIONS.

Insist on Lewis Sections. Look for the Beeware Brand.

G. B. Lewis
Company

BEWARE
WHERE YOU BUY YOUR
BEEWARE
WATERTOWN
WIS. U S A
MAKES THE FINEST.

Watertown,
Wis.

Order from your nearest distributer

GLEANINGS IN BEE CULTURE
JUNE, 1917

EDITORIAL

HONEY MARKETS—PRESENT AND FUTURE

GLEANINGS FEELS that its readers should have the benefit of all the facts and opinions from reliable sources that are in its possession. On the other hand, it hesitates lest some of these facts and opinions may be misleading. However, we shall take our chances and tell what we know, trusting to the good sense and intelligence of our readers, who will probably be able to guess as well as we can what the future price of honey will be.

At the present time practically all the extracted honey, except some little lots in the hands of bottlers, brokers, and speculators, has been sold. Southern honey has begun to come in, and it is bringing good prices.

Buyers are out everywhere, contracting or trying to contract for the coming crop. In some cases producers have been foolish enough to sell their future crops as low as 6 and 7 cents in California. Where beekeepers are reading the bee-journals they are getting all the way from 7 to 11 cents. The best grades of extracted are being contracted for in California now for 10 cents; and some California orange has sold as high as 13 cents. These are all on future deliveries, mind you. Some carloads of amber of *last year*'s crop have sold in New York, for export, for 15 cents, this high figure being due, undoubtedly, to war necessities and the general scarcity of extracted.

We are reliably informed that the British Government has been on the market for 5000 barrels of extracted honey, and the Russian Government for 3000 barrels more. Neither was able to get more than stray cars.

When war was declared in August, 1914, the price of southern honey went down to a very low figure—3 or 4 cents a pound; and now we have learned that some of that same honey (tupelo) is being delivered in New York at 12 cents.

Whence all this furore about extracted honey? While it is true that the general rise in the price of all food products, including sugar, has boosted the price of extracted, yet there are some other factors to be considered.

(1) Recent inquiries in New York among the brokers and large buyers show that there is an unusual demand for extracted honey for export. From the best information available it is apparent that European bakers are using immense quantities of honey to preserve cakes and bread: for it is a well-known fact that honey will keep baked goods soft and moist as almost nothing else will.

(2) An important factor is the scarcity of sugar in Europe. The price of this commodity has gone up there; and in some cases, at least, it cannot be had at any figure. The same thing may be said of syrups. Naturally, American honeys come in to fill up the gap.

(3) Honey is taking the place of glycerine in pharmaceutical prescriptions abroad. Glycerine that was formerly used in a very large way by druggists has become prohibitive in price on account of the European governments commandeering it for the manufacture of dynamite and other explosives. Honey in many of the prescriptions takes the place of glycerine, and it blends as readily with alcohol as does glycerine.

We have been advised that the new preparation that is placed over scalds, burns, and general wounds, and that has given such remarkable results, is almost two-thirds honey.

(4) It is apparent that the bottled-honey trade that has been advertised so extensively of late in this country has brought honey into the drugstores of the United States as never before; and as our druggists can scarcely get glycerine, they are using honey largely, where glycerine was formerly used.

One large broker, perhaps the largest buyer of honey in car lots, when we asked him recently in New York what the European governments were doing with so much honey, said he did not know, but at once sent a cablegram of inquiry to his partner in London, and received the following answer:

"Honey not sold as rations, but purchased in a small way by the soldiers from the canteen committee."

But it is apparent, tho, that honey is being used in a large way by the soldiers in baked goods that are supplied to them; and they are also buying it direct from the canteens.

All of these facts are interesting to the beekeeper. Whether honey will continue to advance is a question. The recent action of Uncle Sam in curtailing the activities of the food speculators will have, and has already had, a tendency to reduce prices. This may or may not have some effect on the price of honey.

There is a possibility that there will be an embargo on honey for foreign shipments; but this is hardly probable, as the European governments are not going to shut off honey any more than they would wheat, peas, and beans. They must have some form of carbohydrate; and when sugar (a carbohydrate) cannot be had at any price, honey (another carbohydrate) will necessarily have to take its place.

Professor Jager, president of the National Beekeepers' Association, born in Austria, but every inch an American in sympathy, states that the Austrian soldiers use sugar on their long marches. He says he has known them to go 45 miles a day with a single pound of sugar, and with no other form of food. Physicians know that big-game hunters can take longer hikes on a pound of carbohydrate (sugar, molasses, or honey) than they can upon wheat or meat. Sugar or honey will furnish more and immediate energy to worn-out soldiers than perhaps anything else. But whether honey takes the place of sugar as the direct food of soldiers we do not know; but we see no reason why it should not be so used.

Some beekeepers, misled by the knowledge of abnormally high prices, will refuse to sell their product at any price. History repeats itself. There is always danger in this. Some years ago there were inflation prices on honey. Large numbers of beekeepers held for more. Finally the market took a tumble from which it took years to recover. Now that prices are taking a healthy upward growth, nothing should be done to disturb this by overboosting the market to a point at which the public refuses to buy and turns to the cheap glucose syrups as a substitute.

In the foregoing we have endeavored to state facts and opinions, so far as we have been able to get them, without fear or favor. All we can say is that honey has already reached a high level in price. What that price actually is today, or what it will be for the crop yet to be harvested, will depend on the grade of honey and the locality. Where there are numerous buyers, prices will be firm, and will range all the way from 7 to 11 cents on extracted—possibly higher. The intelligent producer will not be misled by abnormally high prices, nor will he be in haste to contract early in the season at low prices. Some reputable buyers are putting up a guarantee to pay, say, 8 cents, and as much more as the market will bear at the time the honey is ready to harvest. That form of contract should be to the mutual advantage of both producer and buyer. It combines good will, honesty, and honor.

Beekeepers are warned against contracting with speculators. In some cases, we are reliably informed, honey has been contracted for at 6 cents, and sold by the speculator at practically double that figure. Gleanings feels that the producer should get all the market will allow, less a reasonable profit to the legitimate middleman.

What beekeepers most earnestly desire is *stability* in the markets—not fancy prices that are temporarily inflated only to fall to a low level, nor yet low prices to start on that have a tendency to depress all the markets.

THE HONEY-CONTAINER SITUATION

RIGHT NOW IS NONE too early to learn fully and meet practically the very serious situation confronting honey-producers and honey-packers because of the very great scarcity of the usual containers.

What is the situation and what is the best remedy?

First, let us consider the tin-can situation. On the call of the Department of Commerce there came together at Washington on May 1 representatives of the tin-plate manufacturers and the tin-can manufacturers, the National Canners' Association, and the National Wholesale Grocers' Association, to consider means of conserving the supply of tin-plate and cans so as to insure ample facilities for the packing of the *perishable* crop of 1917. As a result of that meeting seven of the foremost tin-plate and tin-can manufacturers and leading representatives of canners' and grocers' associations were appointed a "committee on the conservation of tin-plate." That committee, on the suggestions of both the Department of Agriculture and the Department of Commerce, have now recommended that tin-can makers supply tin cans only to packers of perishable food. The tin-can makers of the country have all (so far as we can learn) now agreed to follow this recommendation. Honey is not ruled a perishable food. Accordingly, no more tin cans can be furnished shippers or packers of honey until such time as all packers of perishable food products have been furnished a full supply of cans. That time will not likely be before the next fall season (possibly August). It may be interesting to know that two months before this radical action by the National Committee on the Conservation of Tinplate was taken, four of the largest tin-can manufacturers in the country, in reply to inquiries of The A. I. Root Company as to supplying tin cans, wrote that they had booked so many orders in advance that they were unable to quote any price or promise any supply.

That, then, is the tin-can situation today (May 20), and it is not likely to change materially for some time—at least not before the honey crop is harvested.

There are now, probably, some small stocks of honey-cans in the hands of dealers. Honey producers should first, then, make inquiry of their dealers for tin cans. But it is a certainty that these stocks are very small. The best advice to be given extracted-honey producers who must ship their product in bulk is to secure barrels for this purpose—and begin securing them at once. This advice is not only ours but is suggested by the Agricultural Department at Washington. A good barrel, such as has been used for containing alcohol or whisky, sterilized, dried and then paraffined, will serve. New barrels of best quality may also be used, but the price will be higher than those bought second-hand. Another substitute for tin cans that may be used by producers of alfalfa and sweet-clover honey in the West (such honey as granulates quickly) is the "Aikin bag," a waxed-paper product. The Aikin bag heretofore made has been for packages of one to ten pounds. A serious effort is now being made to manufacture successfully a much larger "Aikin bag," the uncertain result of which effort we will publish later.

What is the glass-container situation?

As we write, there lie before us letters from several of the largest glass-manufacturers of the country. The substance of these letters is that the manufacturers are months behind their orders, and have practically withdrawn from the market.

To learn exactly the possible supply of glass containers for honey - producers, Gleanings (thru The A. I. Root Co.) on May 18 telegraphed five of the leading manufacturers of packer glass as follows: "In next issue of our bee magazine, Gleanings in Bee Culture, we desire to give authoritative information regarding glass honey-containers. Can you entertain quantity orders for summer delivery of honey tumblers and jars, and how will prices compare with one year ago? Wire reply."

Here are the replies received:

"We are sold out until November or December. Not offering any prices now."

"Capacity sold. Can not supply."

"We are sold up to July 1. We can not quote at this time for deliveries beyond, as costs too uncertain. Do not make tumblers at all."

The other two manufacturers were perhaps too busy to reply, or were even indignant to think that anybody should wire them about furnishing glass in quantities at this time.

These telegrams prove the existence of a glass-container famine, with no prospect of immediate relief.

Dr. Burton N. Gates, of Massachusetts, appointed by the conference of representative apiarists which met at Washington April 23 and 24 as a committee of one to ascertain the available supply of honey-containers, closes a discouraging report of an investigation made by him as to the status of glass-manufacturing, with this injunction: "It is respectfully urged that some means be provided to enable the small glass-user to know where and how to procure his containers."

Today, to answer practically and specifically "where and how to procure honey-containers," is impossible for even the largest and most experienced bottler of honey to do. As things stand, the hope of securing anything like a sufficiency of glass containers may be dismissed as being out of question. We know that The A. I. Root Company's bottling for the Airline honey is almost completely crippled for the want of glass containers; and altho they have had long and satisfactory connection with several of the largest packer-glass manufacturers in the country, they are today entirely out of containers for several of their largest lines and do not know how nor where to supply the want. The case is the same with other large bottlers.

To answer "where and how to procure containers," we can today only tell our readers of how The A. I. Root Company is energetically seeking to solve the problem. This is by the use of a fiber container, which is a treated paper product. The company has conditionally purchased one million six-ounce fiber containers to supply the place of honey-tumblers. Let us emphasize to our readers that these containers are not yet a proved success; therefore they are purchased on condition that they prove capable in every way of holding honey without leaking. These containers are to be made on special order, printed on the outside of the container to order, and to stand every practical test. We can say that the tests of this container so far give great hope that it will prove a success. However, the top is made with a circular opening which is closed by a swedged paper cap. This paper cap has not in all tests proved nonleakable. It is this fault that the manufacturers are now very earnestly seeking to remedy. In other respects this container will stand hard handling and jolts, and even dropping from a considerable height on a floor or pavement. Therefore, while we again remind our readers that this fiber container is yet in the experimental stage, there is great hope of relief for the honey-bottlers from this direction. We may also add that The A. I. Root Company is trying to have developed a considerably larger container of the same kind, and have strong hopes that it will prove a success.

At this time we can not say more to our readers as to "where and how to procure containers." We do promise them that we will give them the fullest information that either Gleanings or The A. I. Root Company may secure concerning any practical method of meeting the present critical need for satisfactory and economical honey-containers, and hope to give in our July issue a final and definite report on the results obtained in the use of fiber containers.

CHANGING TO EXTRACTED HONEY

MANY COMB-HONEY producers are laboring under the delusion that they cannot change their comb-honey appliances over into extracting except at a prohibitive expense. This is a mistake. In some instances, at least, the present active demand for extracted is justifying the change from comb honey to the production of extracted.

Probably not many beekeepers are aware of the fact that two comb-honey supers for 4¼ x 4¼ sections of ordinary standard manufacture are just the right depth for a regular Langstroth extracting-frame. The two supers, one on top the other, can be held together by means of double-pointed tacks or crate staples that are furnished by all supply manufacturers, and when so superimposed are just right for Langstroth or standard Hoffman frames. All the extra expense is for brood-frames and brood foundation. If one already has a surplus of brood-combs he will not be required to make any extra investment.

If one uses supers for 4 x 5 sections, he can either use shallow extracting-frames adapted to these supers, and which are for sale by all dealers in bee-supplies, or he can tack two such supers together, when they will be of just the right depth for the Jumbo frames. Where the honey-flow comes in slowly, and extends over a considerable length of time, shallow extracting-frames for supers taking 4 x 5 sections are very generally in use.

While we do not feel inclined to advise every one to change over from comb to extracted honey, yet the extra demand for the latter would seem to justify, at least for this season, a temporary change over into the producton of extracted. And this change, as we have indicated, can be effected without any great expense.

We know of no reason why the erstwhile comb-honey producer should not run for both comb and extracted, using the weaker colonies for extracted and the stronger ones for comb honey.

HOW TO SHIP COMBLESS BEES

SEVERE WINTER losses in Montana and Idaho and parts of Colorado, as well as some other western states, is making a very active demand for bees in package form without combs. The honey season in Texas is almost a failure; and we are reliably informed that Texas can send 10,000 to 20,000* lbs. of bees to states where prospects are good and where winter losses have occurred. Other southern states are contributing their quota of bees. Practically every package man, if he is not already oversold, is having all he can do to keep up with his orders.

While those actively engaged in the business know how to ship bees without combs, there may be others who will require to know how this can be done.

In the first place we would advise all who propose shipping bees in this way to secure a sample package from some active shipper that he has used with success. Most supply manufacturers are able to furnish packages that will deliver bees from one point of the country to another.

An important and essential consideration is ventilation. That means that the cage should be, inside cubic inches, at least three times as large as the volume of the bees when "jounced down" in a heap in the bottom of the cage. A larger volume will be better.

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*For particulars write F. B. Paddock, College Station, Texas.

Where there are several packages in one shipment they should be crated together leaving about four inches of space between the cages to provide for air. When a single cage is shipped there should be projecting cleats on each side of the cage so that it can not be shoved up close to other packages shutting off the ventilation.

Another important and vital consideration is the candy. This should be the same thing that is used in ordinary queen-mailing cages. To prepare it, mix powdered sugar and honey heated to 140° F. into a stiff dough. But the honey, before using, should be boiled for at least 30 minutes in a closed container. The mixing should be done with a big spoon in a pan. So far the directions seem very simple; but it is an art to make candy and make it right. The lump of candy should be allowed to stand for two or three days in a warm room. If it becomes sticky, and "runs" (that is, softens sufficiently to spread out) in a shallow pan, more powdered sugar should be mixed in; but be careful not to overdo it. Too much honey or too much sugar will spoil the dough and kill every bee in the package before arrival at destination. When the candy is just right it will stand a temperature of 90° and not "run."

During extremely warm or hot weather it is advisable to have a bottle of water mounted in the top of the cage. This consists of a little tin can turned upside down, with a single perforation thru the cap of such a size as will just admit a No. 30 wire. Do not make it larger.

When practical, bees in package form should be moved in cool weather. When the temperature ranges between 80 and 90 during the middle hours of the day, the average shipper may expect some losses. To prevent overheating, printed directions on the outside of the package should tell the expressman to keep the bees out of the sun and not to put them in a close express room over night.

Just before starting the bees on their trip it is advisable to feed them some thin syrup made of sugar. This may be applied on the outside of the wire cloth by means of a rag dampened in the syrup; or it may be painted on the wire cloth.

Bees should not be put up in their packages until within about two hours of train time. They should not be allowed to stand in cages out in the sun. This is very important.

When the consignee receives the package he should give the bees sweetened water thru the wire cloth, as explained; and he should be careful not to overdo by daubing the bees.

DANDELION AS A HONEY-YIELDER

IN OUR ISSUE for April, page 252, in our write-up of dandelions we stated that while the plant "yielded little or no honey," it was useful mainly for the pollen it furnished. Since that time numerous correspondents from all over the United States where dandelion grows assure us that the plant does yield some honey—some years more than others. Mrs. Floyd Markham, Ypsilanti, Mich., writes that their bees one season gathered enough dandelion honey so they had quite a few sections filled and capped over. The flavor is rank and color dark. The nose, she said, could very easily tell what kind of honey it was before tasting.

The dandelion has never yielded any surplus in our locality—probably because we have too many bees for the territory; but we have always regarded it as extremely useful in starting bees in breeding; and in view of the general testimony we shall have to conclude that bees gather at least a little honey as well as a large amount of pollen from dandelion.

PATRIOTISM IN HONEY PRODUCTION

THESE ARE THE DAYS when the nation expects every man to do his duty. These are tremendously, awfully serious days. We are at war. Bloodshed and suffering of our own American boys will soon begin in the world's fight against that monstrous delusion of Prussianism and Kaiserism that might makes right. The great cause awaits America's strength and bravery. We shall not fail that cause. But this nation will be tried as never before. A part in that great trial will be a test of our resources and food supplies under the strain of war. The war, indeed, seems now likely to be won or lost by food conditions. Just here is where every citizen, who has the opportunity to produce any kind of food stuff, can enlist in the world's great cause as efficiently as can the soldier at the front—and here is where the beekeeper may enlist now and at once.

Let us repeat that all indications point to the fact that it will be impossible to produce enough honey the coming season to supply the demand. As in our May issue, so in this, we urge every beekeeper to produce the maximum of honey. If there are any old-time beekeepers in the vicinity whose methods are crude, and who allow excessive swarming, make arrangements if possible with all such to operate on shares, or, better, buy the bees outright.

If there ever was a time when a colony would pay for its initial cost in one season and make a comfortable surplus, it will be this year. The present price of extracted honey, with the active demand for it, will make even a light crop pay first cost of the bees.

Honey is a necessary food, like wheat, bread, and meat. It helps to make up a balanced ration. Sugar is bound to be high and scarce, and honey must come in to take its place.

In a word, the beekeepers of the United States should join with the farmers and all others in increasing the food supply. The general movement is not only patriotic, but may be the means of saving many lives —if not in this country, in Europe.

* * *

PRICES ON COMB HONEY

ELSEWHERE MENTION is made of the active demand for extracted honey, both domestic and foreign. So far as we can discover, no such active demand prevails for comb honey for some of it is being held over and some granulated. Just at present it is hard to say how prices on comb will rule; but present indications do not show that they will be any higher than last year. There is a possibility that the price of extracted may reach the price of comb, with the advantage of lesser cost of production for the former. This would be unfortunate. Comb honey should always maintain an advance of from 35 to 50 per cent above extracted. It may do so the coming year. We hope so.

* * *

GOT STUCK ON COMB HONEY

WE HAVE LEARNED of a number of buyers of comb honey who bought too heavily of that commodity, and, not knowing the importance of keeping it in a warm room during the cold months, a lot of it granulated, with the result that they cannot unload. At present prices they can melt it up if they know how and sell the wax and honey separately and not lose much if any thing.

GOVERNMENT MARKET NEWS SERVICE

AN ANNOUNCEMENT of a better market news service to be expected from the United States Department of Agriculture, reaches us just as GLEANINGS is about to go to press. Every beekeeper who produces honey for wholesale market will read this announcement with keen interest. It is given out as follows:

> In response to urgent requests, the Office of Markets and Rural Organization of the United States Department of Agriculture is planning to extend its telegraphic market news service to include reports on honey. Practically all growers in the important commercial sections shipping fruits and vegetables are familiar with the market bulletins which have been distributed by the Office of Markets during the past two seasons. These daily bulletins, which are free by mail to any who request them, cover nine of the more important perishable commodities and show daily the number of cars of each commodity which have been shipped from each State during the past twenty-four hours, as well as the following information for each of the eighteen markets reported by representatives of the Department. The number of cars which have been received on the market during the past twenty-four hours segregated by originating districts; the general quality and condition of the produce from each section; the weather conditions; and finally the prevailing wholesale (jobbing) prices at 8:00 a. m. These reports are telegraphed to Washington, summarized and edited, and rewired to the various markets where representatives are stationed, with the result that printed bulletins are issued and distributed simultaneously about 1 p. m. of the same day from all these offices. Some idea of the size of the service may be secured when it is understood that over 3,000,000 bulletins were distributed last season to over 50,000 persons located in more than thirty states.
>
> Altho it is estimated that only 10 per cent of the honey crop is distributed in car-lot quantities, it is claimed that prices for the local movement depend to a large extent upon the commercial price. An accurate and unbiased report of prevailing prices in the larger markets should do much to prevent speculation, steady the market, and tend to eliminate the unfortunate practice of throwing the entire output upon the market at the opening of the season, with the resultant drop in prices and serious scarcity later in the season.
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> It is impossible at this time to state definitely the exact form in which the proposed honey reports will be issued, as representatives of the Department are now visiting the larger markets and interviewing members of the trade, representative producers, and editors of beekeeping journals to ascertain the exact information which is needed, the frequency with which the reports should be issued and other essential details. It appears probable, however, that the reports will be issued semi-weekly, weekly, or even bi-weekly, as daily reports are not essential as in the case of perishable fruits and vegetables. In contents they will follow closely the bulletins now being issued which have just been described. The service will be started about July 1, and the information will be made public thru the newspapers and beekeepers' journals as well as by separate bulletins by mail to all interested persons who request the information. All inquiries should be addressed to Charles J. Brand, Chief, Office of Markets and Rural Organization U. S. Department of Agriculture, Washington, D. C.

SUCCESS AFTER FAILURE

Fruit-growers Pay $5.00 a Colony for the Use of the Bees During the Blossoming Period

By E. R. Root

THERE is nothing that succeeds like success. On the other hand, bitter experience has shown that sometimes success does not come except thru failure; and sometimes it is necessary for one to meet severe defeat more than once before victory is his.

I have already told the story of the late John Repp—see GLEANINGS for Aug. 15, 1913, page 561, and again for May 1, 1914, page 348; how John Repp, on land that was considered good for nothing, made an attempt to go into the fruit business, but made a failure; of how he tried it again, and failed once more; of how the wagging heads made the prediction "no use; the man has not got it in him," and that "soil conditions" were wrong. But that was not John Repp. He tried the third time; and just as he was on the eve of success, or just as he had achieved success, he died. Fortunately he had a wife (still living and past 80) with pluck and determination. The spirit of the parents was bred in the boys, Albert, Charles, and Joseph. The dearly bought experience of the father, the irrepressible spirit of the dear mother, and the severe struggles of the boys during the time the father was trying to get on even terms with the world, was not without its value; and now the Repp brothers are famous the world over for their achievements in fruit-growing. They have 800 acres, 500 of which are devoted to fruit, and the whole country round about them has caught the spirit, so that there are now 5000 acres in Gloucester Co., N. J., devoted to the growing of apples, pears, peaches, cherries, and grapes. But it is easy to see that the orchards of the Repp brothers are in the lead.

So successful have these boys been that their enormous crops have to be stored in a mammoth cold-storage plant they built, capable of holding 120,000 bushels of apples; for it did not take them very long to see that such yields could not be all marketed at one time. The plant is one of the most modernly equipped that one can find in the country. So perfect are its appointments that some varieties can be kept sound and in good condition for three years, or until such time as the market is ready to receive them. And such apples! It was my pleasure to taste some of them, and I found them to be as sound and juicy as one could wish, with none of that wilted, mushy, or mealy taste.

The Repps built macadamized roads thru their orchards.

So far my story would be more suitable for a fruit journal than for a bee journal. But listen: The Repp boys would no more think of raising fruit without bees to pollinate the blossoms than they would attempt to get along without spraying or pruning.

Said Charley Repp, the present manager of the cold-storage plant and of the orchard business: "So indispensable are bees to the growing of fruit in this county that our fruit-growers have come to the conclusion that they can afford to pay local beemen the rate of $5.00 a colony to have the bees in the orchards during the time the trees are in bloom, and then take them away again." Think of it!

This is nearly equivalent to the price of the colony itself.

Mr. Repp went on to state that the qualities that make up a good fruit-grower do not necessarily make a good beekeeper. So he and his neighbors have concluded that it is cheaper in effect to buy the bees outright, and, after the season is over, give the bees back again to the beekeeper. The transaction is virtually a temporary purchase, with the proviso that the beeman can take away the property that he sold, and the following year come back and sell it again, and so on *ad infinitum*. That is a mighty good proposition, you may say, for the beekeeper; but it is probably a better one for the fruit-grower, because he has no responsibility in wintering, and, what is much more, he does not have to be bothered with the bees at a time of year when they are not needed. It is about time that some of the fruitmen in the country should wake up. If the apple-growers of New Jersey can afford to pay a rental of $5.00 for only three weeks, others can.

I took a number of photographs of the orchards. Picture No. 1 shows a road down thru the center of a big

The mixing-tanks where the spraying liquids are prepared.

tract of fruit-trees. As the ground is sandy, the owners found it necessary to macadamize all their roads. Over these the Repp boys cart their fruit in a five-ton truck to the highways. The building of permanent roads thruout the orchards is a necessity as well as good business judgment.

The trees had all been sprayed with lime sulphur. They all showed clean, healthy growth. The San Jose scale had been practically wiped out of the locality. But that makes no difference. The Repp brothers kept on spraying with lime sulphur. But bear this in mind: *they do not touch a spray-pump while the trees are in bloom,* for the work of the bees they must have.

Picture No. 2 shows where some of the spraying-liquids are mixed together. The power spray-wagons are then run under the big tank where they are filled.

Picture No. 3 gives a view of one of their numerous pear-orchards in the height of its prosperity. In all of the views it will be noticed that the Repp boys, as do all others in that locality, practice what is called "clean cultivation." The loose soil under the trees is thoroly harrowed—no small job when one considers the 500 (and even 5000) acres which must be covered. The upper right-hand corner shows one of the beeyards owned by the Repp brothers. Charley Repp went on to state that he had formerly pursued the policy of owning bees; but he had about come to the conclusion that it would be better to let the local beeman own them and then pay $5.00 per colony for about a month's use in the work of pollination. Mr. Repp believes in the policy of scattering the beeyards, and therefore has three apiaries, located on different parts of the fruit-farm.

Picture No. 4 gives a view of one of the Repp vineyards for the raising of Concord grapes. At the time of my visit, artificial fertilizer was being distributed over the ground that had been thoroly harrowed.

Picture No. 5 gives a view of a little

One of the numerous pear-orchards of the Repp brothers. Upper right-hand corner is a view of one of three bee-yards owned by the Repps, and which are for no other purpose than to pollinate the orchards.

One of the Concord vineyards owned by the Repp brothers. Notice the clean cultivation and the wire trellis.

flower-garden next to the home of Albert Repp; and in the background will be seen an apple-orchard such as one may see all over this 5000-acre tract of orchards.

RAISING FRUIT RATHER THAN HELL.

When the father, John Repp, was making failure after failure in his fruit-growing operations, no one, of course,, thought it worth while to go into the same line of business; but when he and his sons began to show that those failures spelled success, then everybody went into the business, including some of the liquor people, who were sore over the Repp boys' active fight against the saloons; for they said to the boys, " You cannot run against our business without having us run against yours. We are going to buy up all the land around you, and run opposition to you."

" All right," said Charley. " I would rather have you raise fruit than to raise hell."

When the dispensers of booze told him they were going to put in a mammoth cold-storage plant that would outrival his, and that they would make ice cheaper than he could, Charley snapped back that he would rather they would make ice than to make bums.

It seems the liquor men did buy up some land, and put it into fruit, for they were determined to run the Repp boys out of business for their " meddlesome interference."

As we drove around with Charley in his " big six " he pointed out one of those orchards that was financed and operated by the whisky crowd, but it did not look as thrifty and as fine by a long way as the Repp orchards. " But," said Charley Repp, " it looks to me since the war started as if they will have to get out of the saloon business and raise fruit, and I am glad of it. I will help them all I can."

That is genial Charley Repp all over.

Albert Repp's flower-garden next to his residence. In the background is one of the numerous apple-orchards in this 5000-acre tract of fruit-growing.

Competition from the liquor crowd—that is the least of his troubles. Any one who can beat him in the fruit business is welcome.

By the way, Albert Repp got after some of the bums and toughs in their native town lately. He was so active and successful in his work that he made life miserable for them. When it came time for him to go to Florida to look after the cucumber business he left. Then the bums and toughs made up their mind they would tackle the younger brother, for they must get even. So they began one night to throw brickbats and fire guns at Charley Repp's house, smashing in the windows and doing damage generally. Charley said he would not have cared had it not been for his wife. "But," said he, "when I know my conscience is clear, and have tried to do my duty, I do not care what these fellows may do or say. I shall go right on raising more and better fruit; and if they keep on raising hell, I'll see whether there is a God in Israel."

As he said this his genial smile changed to a look of determination that meant that neither he nor his brother could be intimidated by mere brickbats, any more than the old father could be by early defeats in fruit-raising. The Repps are just clear grit.

BREED FROM THE BEST

Every Honey-producer Should be a Queen-breeder as Well. How to Make the Selection

By Dr. C. C. Miller

AFTER a longer experience in beekeeping than falls to the lot of most men I had settled down upon two points as the most important things to be urged upon beekeepers, and especially beginners, that I could glean from my whole experience. The first was that improvement of bees should not be left to a few, but that *every* beekeeper should make it his business, his life-business, to improve his stock. The second was that each beekeeper should adopt the slogan, "Breed from the best."

In order to carry out this scheme I have urged that careful tally should be kept of the performance of each colony, especially the amount of honey secured from each, due allowance being made for any advantage or disadvantage any colony might have labored under. For example, if two colonies were about equal in surplus, and in the previous spring a comb of brood had been taken from one colony and given to the other, then the advantage should be charged up to the one colony, and the other colony should have credit for its disadvantage.

Having thus a record of the standing of each colony, two ways of proceeding are open for the season's queen-rearing. One way is to select for breeders those queens which are a little better than the average, on the ground that advance, if slower, will be surer; the other way being to breed from those colonies which have the very highest rating. In my own practice I have followed the latter plan; and, not having tried the other, I do not know which is better.

Now, however, I am confronted with the question whether there may not be another way that is better than either of these. On page 27 of Gleanings for January, 1917, appears an article headed "Fallacies in Breeding," with the sub-head "Raising Queens from the Best Honey-producing Colony Not Always the Best Policy in the End." Taking those two headings together, it seems we are to understand that it is a fallacy to rear queens from the colony that gives the most surplus, or at least that it is not always the right thing to do.

When a man like Geo. W. Phillips says anything about queen-rearing, his word commands attention, since his views are based on the experience of rearing thousands of queens. There is nothing in what he says to militate against the idea that *every* beekeeper should strive for improvement, with the motto "Breed from the best," for he speaks with evident approval of "earnest efforts to achieve those finer strains of stock for which all bee-breeders strive," and when speaking of variations in bees he says: "Right here is the queen-breeder's chance. By carefully selecting those queens whose colonies show desirable qualifications he may greatly assist nature in giving the desirable traits survival value." The only point, then, in which there is question as to the correctness of my propaganda is that one of "carefully selecting" the right queen or queens to breed from.

If it isn't the right way to select always the queen whose colony does the best work, what is the right way to select? With all my heart I wish Mr. Phillips had given a full and explicit answer as to how that is done. Unfortunately he has not done so, being satisfied to give us "a few fundamental biological laws," the knowledge of which I am afraid is sadly lacking, and in giving them Mr. Phillips has done a real service.

The matter is one of such immense importance that I may be allowed to do the best I can at giving an answer, trusting to Mr. Phillips or some one else to make any emendations needed. For that matter I should like to see the matter fully discussed without any reference to anything I may say.

At the outset, in trying to follow Mr. Phillips' teachings I find a difficulty in his classification. He says: "There are two kinds of people who purchase queens: those who buy for breeding, and those who buy yearly for honey-gathering; just possibly it might be a good thing if they were divided into those two classes. As a matter of fact I don't believe they are. I doubt if one beekeeper in fifty of those who buy queens buys them yearly with no thought of rearing any queens himself. I know for certain of only one such, and he's a man of high standing as a honey-producer.

But why limit our consideration to queens that are *bought?* In comparison with the rest of queens in existence they are few indeed.

I suppose that the great majority of beekeepers rear queens having in mind the honey to be secured from each, with perhaps little thought of improvement of stock. My idea is that, with the exception of that small class who buy all their queens yearly, *every* beekeeper should strive for improvement, even if he never buys nor sells a queen. In other words, every honey-producer should be a breeder as well; otherwise he'll get left in the long run in the matter of crops. The practical question now is, how shall he select the queens from which he breeds?

We are told that we may have a queen, say we call her A, of poor lineage, but so well reared that she gives a big surplus. Another, B, of very superior stock, is so handicapped in some way that she gives only half the surplus A does; but if she had had the same chance as A she would have excelled A in surplus. Clearly B is the better queen to breed from. But how are we going to select her? I don't know. Mr. Phillips doesn't tell us.

To be sure, I can think of a case in which there would be no difficulty. A might be the best in an apiary where all were scrubs and B a queen, or an immediate descendant of a queen of best quality obtained from a reliable breeder, in which case, no matter how much B should fall short of A in the amount of stores, B should be the one to breed from. And, in general, it may be said a queen bought for the improvement of stock can hardly be fairly judged by the amount of surplus she yields, since her journey in the mails and the possible shock of introduction may leave her incapable of showing how good blood she really possesses.

Such cases, however, are exceptional. Let us get back to the usual, the man with 25, 50, or more colonies, whose queens are reared in his own apiary. The important thing, just now, is to advise him how to select the queen or queens from which he shall breed. Suppose that A has given him the biggest yield. This, as already intimated, after taking into account any known advantages or disadvantages, such as taking or giving brood or bees at the time of building up. But suppose another queen, B, if she had had the same chance as A, would have excelled. Then certainly it is better to breed from B than from A. But how is the beekeeper to know that, given the same chance, B would have stored more than A? Can he properly estimate what should be credited to the queen on the score of her handicaps? As such handicaps, Mr. Phillips mentions old age, the loss of a leg, and poor nutrition in the larval stage. The matter of old age hardly presents any difficulty, for the old queen's record that she made before she was old still stands to her credit or discredit. I may remark in passing that one of my very best yielders last year, 1916, had a queen reared in 1913. You may rest assured that if she is still alive in the summer of 1917 her age will not be counted against her.

If a queen is minus a leg, whether from birth or by accident, how is that handicap to be estimated? I don't know how we can tell. Possibly it is a very serious handicap in some cases, yet I've had five-legged queens that were excellent layers. But I know of no way of telling by looking at the place where the missing leg ought to be how much better she would have laid, or whether at all better, if she had had another leg.

If B's smaller surplus is due to improper larval nourishment, how much are we to tally for that? The lack of proper nourishment may have been little or great, and it's such an intangible thing that I for one give it up.

Perhaps it may not seem presumptuous in

me to say what I would advise the owner of the two queens, A and B. It would be something like this: "You can't tell very much about B as to just what she would have done if she had had the best of chances, and if I were you I think I would leave her altogether out of the running. If A has given you a bigger surplus than any other in the apiary, it's a pretty safe guess that she's a better queen than the average; and this being the case it follows that breeding from her must raise the average; and if you keep this up year after year there will be constant improvement of stock so long as you find one queen better than the others."

If that advice is not good, please tell us what is wrong about it, and be sure to tell us what advice would be better.

I think I hear some one say: "It gives me a sort of uneasy feeling to think there may be a queen in my apiary handicapped by bad rearing that would be better to breed from than the one I am now using. If there is one such, there may be many. If you can't spot them, may be some one else can."

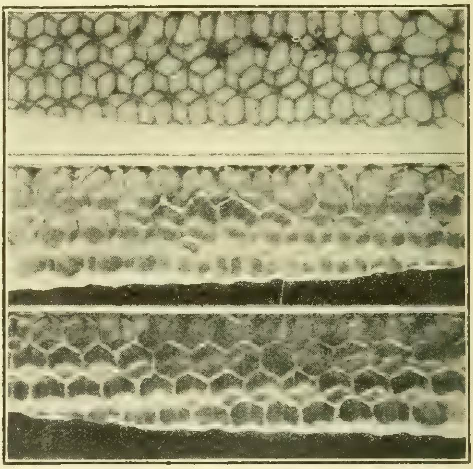
Whether there be any cause for uneasiness depends upon what has been done. If you are in the habit of having queen-cells reared in nuclei or weak colonies, or at a time when little or no honey was to be had, then you are sure to have a lot of poorly reared queens, altho they may be of excellent blood. But up-to-date beekeepers don't rear queens in that way. There is no excuse for a beekeeper to have cells reared in anything but strong colonies at a time when forage is abundant; and when that is done, how can there be poorly reared queens? So it is in the power of the beekeeper to have none but well-reared queens; and that being the case, it seems to me the right way for him to rate his queens is by the amount of honey stored by each.

One reason why I believe in that way is because of what it has done for me. For years I have followed the plan of keeping tally of the yield of each colony in order to breed from the best yielders, and my average per colony has gradually increased until it is three times what it was. Years ago lean years were in the majority, some years not only giving no surplus but obliging me to buy sugar for winter stores in order to keep my colonies alive. For some years I have had no interest in the price of sugar, the bees not only finding their own stores but giving me more or less surplus as well, with no year of entire failure. Some of the difference, I think, is due to improvement of pasturage; some of it, no doubt, to better management; but I think it is due in the main to improvement in stock caused by selecting as breeders the queens of colonies giving the largest yields.

If I am wrong in my views, I shall be exceedingly thankful to any one who will set me right. Until then I don't believe I can render a greater service to beginners than to urge their adoption of the slogan, "Breed from the best," and to count those best that give biggest yields.

Drone-cells One Side, Worker the Other

Burdett Hassett writes: "I have certainly seen several cases, here in Virginia, of drone-cells on one side and worker-cells on the other, of *natural comb*—not built on foundation at all. A. Tschoeberle writes that he had a small patch of drone brood on one side and worker brood on the other, and it was built on foundation.



Drone-cells on one side of a comb, worker on the other. The upper view is a transparent one, looking right thru; the middle view shows the drone side, and the lower the worker.

And now comes by mail a bulky parcel from Allen Latham—a section of honey. I found drone-cells on one side and worker-cells on the other. Curious to know about the base, I sliced off both sides and washed the honey off the septum. Isn't it the most "impossible" thing you ever saw? Looking thru it you will see natural base in a few cells, but in most of them the cells of one side are entirely independent of the other, built any old way, regardless. I didn't suppose bees could be induced to do such a thing. After this I'll hardly dispute anything—done by Allen Latham's bees.

C. C. MILLER.

CAN THIS BE DONE?

Continuea Cold Weather Causes Bees to Destroy the Queen-cells

By the Editors

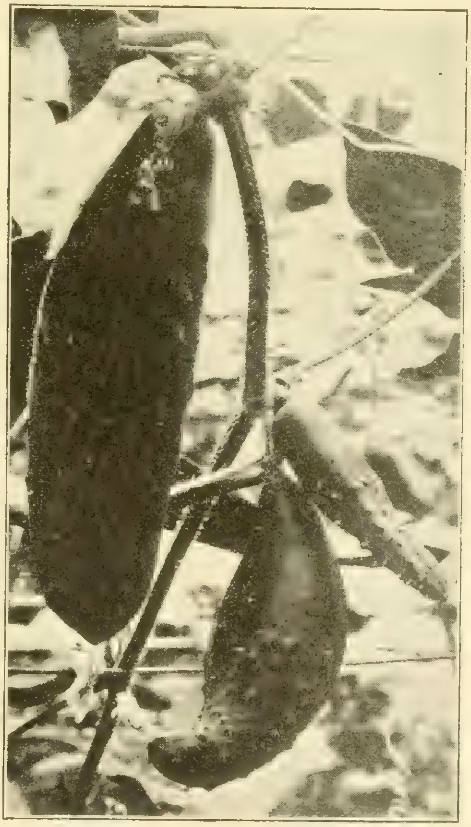
AFTER the experiment recorded in the last issue with the virgins from the chilled cells, we at once grafted a large number of cells so that the experiment for the first time might be given a good fair test. On account of the distance from Medina to this large greenhouse where the mating experiment is under way we decided to start this graft in our queen-rearing yard here at Medina. The weather at that time in April was ideal, bees flying every day and all day long; and on account of the greater convenience, therefore, we felt this to be the best plan, all things considered.

The unexpected happened, however, as it sometimes does. Instead of a June atmosphere with drones flying and conditions normal for summer time as at the time the graft was started, the weather suddenly turned cold, and for several weeks we had March weather. In fact, conditions at Medina were no exception to those in the entire northern part of the country—there were days at a time when the bees could not fly. The queen-cells that we were caring for were destroyed of course. Much to our disappointment, therefore, there are no new developments in the mating experiment to report this month. When so much is at stake we are sorry that so many unforeseen difficulties arose.

The long delay, however, is not without its compensations, for we have had the privilege of making a most interesting study of pollination.

The company owning this large building also own a great many other greenhouses, some of them nearly as long but none of them as high, the roofs being of the familiar M type. The manager of the whole series of buildings gives it as his opinion that a blossom must be visited not once but many times in order to be thoroly pollinated. In the smaller buildings he has found it necessary to have at least one colony of bees in each aisle, for, altho there is no wall between each part of the M roof, the cucumbers grow so thickly that the bees do not readily go from one roof to another, in spite of the fact that they are so close together. In the small buildings entirely too large a proportion of the cucumbers are culls, as shown in the illustrations. The one cucumber at the left, probably because the blossom was very prominent, was visited time after time by the bees with the result that the cucumber is splendidly developed, uniform, and symmetrical. The two others close by are examples of malformation caused by incomplete pollination.

In the large building where the glass roof is so high, and where the cucumbers are growing in one unbroken vast field, the culls are the exception rather than the rule. In fact, they are very rare. The bees in the hives located above the vines have as good a chance at one blossom as at another and the work of pollinating is far more consistently and thoroly done. In the smaller buildings, more bees are required, proportionately, and even then the percentage of culls is greater than it should be.



One perfectly developed cucumber and two culls —the culls being the result of incomplete pollination.

GLEANINGS IN BEE CULTURE

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

"How can I get the bees started at work in the sections? Sometimes it is well into the main flow of nectar before a part of my colonies store in the sections, while other colonies go to work at the beginning of the flow and keep steadily storing till the end of the season."

This is a question which every beginner, sooner or later, is likely to ask. Having each colony start work in the sections at the very beginning of the main honey harvest is an idea well worth looking after. Some most excellent beekeepers treat this phase of beekeeping very lightly, and incline to make light of the one who does not succeed. "If the bees get plenty of honey they will go to work in the sections; if they don't, they won't." This I once heard from the lips of an excellent apiarist in reply to such a question at a beekeepers' convention.

I know that locality may have a bearing, and the same may be said in regard to the variety of bees employed. And the way the season opens has much to do with this matter. If there is a steady but not profuse flow of nectar from early spring up to the beginning of the clover harvest, just enough to keep the bees breeding nicely, and then in due time the clover comes on with a rush, just as the hives are full of bees and brood, there will be little difficulty in getting the bees to go into the sections provided the supers were on the hives a week or so before this rush comes. But suppose the season begins with a light flow which *gradually* increases — no sudden jump, as there often is at the opening of clover—the probabilities are that some of the colonies, very likely very many of them, if they are black bees or dark hybrids, will begin preparations for swarming. If the energies and aspirations of the bees could have been turned sectionward as soon as there was sufficient honey brought in, more than to supply the brood, it might have made all the difference between a good crop and a very small one.

Then some colonies seem very loath to store honey except close to the brood. The bees will crowd the very last cell in the brood-nest before they will build comb in the supers, and in some instances before they will draw out foundation when full sheets are used in the sections. I have had good success with such colonies by taking a wide frame of sections from any colony working in supers and carrying it, bees and all, to the one not so working, and exchanging this well-under-way wide frame for one not commenced upon at all. Twenty-four hours later the whole super is apt to be quite well filled with bees, and each two rows of sections on either side of the one given having comb-building going on, or the foundation in the section drawn out and quite a little honey deposited therein.

Now, while this plan will work successfully without materially injuring the prospects of any colony which has already commenced work in the sections, and is the best of anything I know of where sections full of comb are not on hand, yet it entails quite a lot of extra labor right at a time when such labor can hardly be spared from more necessary work in the apiary. For this reason, in August and September of the year before I begin preparing for starting the bees at work in the sections. In my experience of over forty-five years I have found that nothing so quickly and surely lures the bees into the sections as do nice empty combs; and in most sections of our country these nice combs can be secured to the best advantage during the forty days between August 20 and September 30, at which time buckwheat and fall flowers are giving a moderate yield of nectar. By using very thin section foundation, and filling each section with it, leaving only about one-fourth of an inch at the bottom, and setting supers of such sections on the hives at the time named, the bees will enter them and draw out the foundation. Then, before any great amount of honey has been stored in the cells thus drawn, these supers are taken off and other supers put on. In this way the bees can be worked profitably for empty combs in the sections while plenty of stores are secured below for the winter.

Of course, where one has a market at good prices for this dark honey these sections may be left on for completion; but with me the price of dark honey is so low, in accordance with fancy white, that securing these nice white combs for use in the clover harvest gives a greater profit in the end; for a super of such combs, kept over from the previous season, is much more valuable than a super of finished sections containing dark or fall honey—simply because it will so quickly and surely start the bees to working in the sections in the very beginning of the flow from clover or basswood. Of course, it is not necessary to have these drawn combs in every super; but for the best success the first super put on should have them if possible. If not possible, then the first super should have the row of sections at each outside, and that in the middle filled with such drawn combs. After once in the supers the bees will generally continue to the end of the season.

Borodino, N. Y. G. M. DOOLITTLE.

* * *

Letters from a Beekeeper's Wife

Home, June 1, 1917.

Dear Sis:

If it has been raining as much and as long with you as it has with us, I pity you! I wonder if the pent-up energy of your three boys would equal that of my one boy and a man! Billy is always a problem during a rainy spell, but this time I've had Rob on my hands as well, and it has been a great relief to have the sun come out and stay out. Ten days of steady drip with only short recesses made Rob like a caged lion; he was so wild to be out in the apiaries, and to have the bees flying again, that he could scarcely contain himself. He was extremely busy every day, however, for he knew that these rains keep the bees in the hives, and that swarming would be bad just as soon as they could fly. Such an interruption as this in the work is hard to bear. It is one of the uncertainties of a beekeeper's life that has to be counted upon.

No man who is not a good gambler should ever be a beekeeper. You know they all always figure on a "bumper crop," but there are so many factors upon which the crop depends that it really is a gambler's chance. A beekeeper can control his bees to a certain extent—have them free from disease and in good condition for gathering—but he cannot control the clover crop, nor the flow of nectar in the clover, nor the weather.

Rob is really philosophical, for he says that *if* the weather holds from now on we will have a bumper crop this year anyhow. The rains made a fine growth of clover and I never saw so much of it.

I wish your boys had been here to see the swarms we had one day right after the rainy spell. It was the worst swarming time we have had for years, and the fun has just begun! This swarming happened here in the home apiary. One colony started and the others seemed to catch the swarm spirit and followed suit. Such a time as we had hiving them, with five swarms in the air at a time! We caught all but one with an unclipped queen that lodged high in the big oak that the swing is on. Rob couldn't get to it, and in despair resorted to throwing stones, hoping to dislodge it so that it might settle again in a more convenient spot. Instead it flew off to the woods and we had our hands so full that we couldn't follow it.

Six swarms settled one after the other on the little pear tree in the middle of the yard, which makes Rob more firm than ever in his conviction that it is odor which attracts bees in swarming. He thinks the odor left on the tree by one swarm attracts another, and that the swarm odor in the yard excites bees from other colonies to swarm.

Rob always feels discouraged if swarming sets in, altho he knows that it cannot always be controlled. He seems to think he is to blame and has failed in his beekeeping practice. I told him, in an effort to cheer him, that bees are still wild animals, and if they have not been domesticated in all these centuries, he needn't think he can do it. He replied impatiently that he does not expect to tame them, but he does think it is about time that scientists found out the cause of swarming so that there would be a sound basis for methods of control. At that, Bill spoke up and said, "Why do you wait for somebody else, Daddy? you could find out for yourself." Rob looked thoughtful, and a little shamefaced, as he replied, "Billie, I believe you are right. We can't expect the men in the laboratory to find out these things. It is the men who know bees thoroly that will have to learn scientific experimenting and do it themselves."

So do not be surprised if we set up a laboratory next! We shall not look for you until we hear that Howard is better. Poor little chap! I do hope that it is not whooping cough. Our fresh country air will do him lots of good, I feel sure. With love to all of you, Your loving sister,

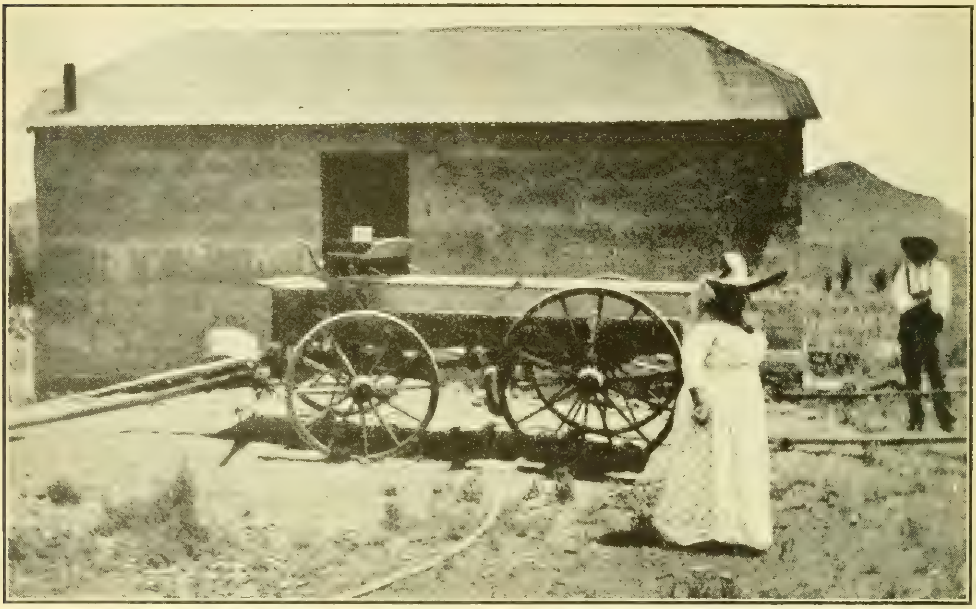
Mary.

* * *

Concrete Workshop and Honey-House

I have a concrete honey-house with a bee-cellar underneath and a workshop on the north side, where I make hives and brood-frames. I have a Barnes saw-table that is

FROM THE FIELD OF EXPERIENCE



Concrete honey-house and work-shop belonging to T. J. Riggs, Wilcox, Ariz.

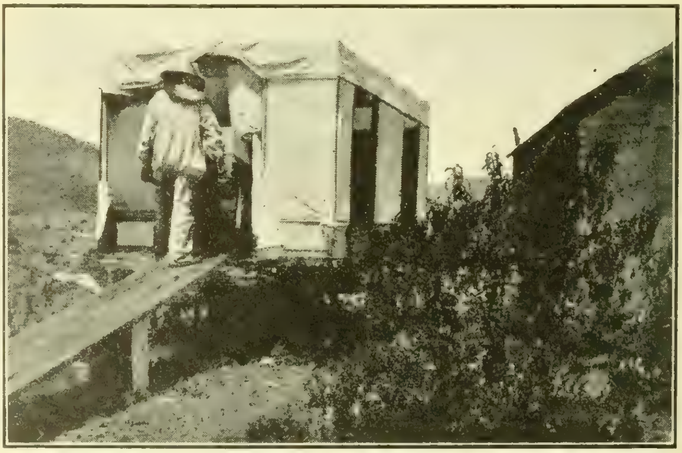
run by my little extracting-engine. On the north side of the building at the driveway the wagonbed is level with the platform, so that the loading of the honey is very easy—in fact, the moving of the honey all the way to town is downhill.

For extracting at my five different apiaries I have a portable room built on a wagon. This is very light, as the body is made of thin strips of wood covered with canvas. A wide plank leads from the ground up on to the wagon, and the honey is run on the wheelbarrow right thru the hanging canvas door. When we move to another yard this wide plank is pushed in the door of the extracting-wagon and is thus carried right along with it.

I also have what I call a tank-wagon, which is stopped on low ground, a little in front of the extracting-wagon, and the honey runs thru a pipe from the extracting-wagon to the tank.

I have 400 colonies of bees in five apiaries. Two experienced men with the outfit can extract from 100 colonies a day.

Wilcox, Ariz. T. J. RIGGS.



Mr. Riggs' extracting wagon made of a light framework covered with canvas and screen.

FROM THE FIELD OF EXPERIENCE

Fruit and Vegetables Canned in Honey

To use honey in canning fruit and vegetables, to be perfectly successful you must choose only sound vegetables and fruit. It is false economy to purchase those on the verge of decay, even at greatly reduced prices. The fruit should be barely ripe—never over-ripe—and the sooner it is taken from the tree or garden the better.

Some prefer to put the fruit or vegetables in the jars with the syrup, and cook in the boiler with a perforated rest under them; but I always cook mine in the syrup and can.

To can cherries, plums, and peaches, take half their weight in honey and add water enough to make a good syrup. Then, after it comes to a boil, drop in the fruit and boil about ten minutes. Skim carefully all scum that arises. All kinds of small fruit can be canned the same way.

The honey is wheeled, four supers at a time, up a wide plank and thru a canvas curtain.

To can corn, use two quarts; cut off the ear; half pint of honey; one pint of water; four even tablespoonfuls of salt; boil thirty minutes, then seal.

To can tomatoes, use three quarts; one pint of honey; three tablespoonfuls of salt; boil thirty minutes and seal.

Be sure to skim carefully all fruit and vegetables.

Topeka, Kan. Elizabeth Little.

[As a supplement to the above article we are reprinting, by request, an article on this same subject which appeared on page 463 of Gleanings for 1910.—Ed.]

There is no mystery or luck about the successful canning of fruit. If properly done, failure is almost out of the question. The fruits or vegetables should be barely ripe, never over-ripe, perfect of their kind, or at least with no fermentation started in them, and the sooner they are taken from tree or garden and sealed up in jars the better. New fruit-jars are best put over the fire in cold water to cover them, brought slowly to a boil, and slowly cooled; then they will stand greater extremes of heat and cold.

If particular about keeping the fruit in shape, or where a large amount is to be done at once, it is usually put uncooked into the jars and covered with the honey. The jars are then set into a larger boiler with a perforated rest under them to keep them from the bottom. Fill the boiler with cold water nearly to the shoulders of the jars. Screw the tops on rather loosely; put the cover on the boiler and bring to a boil. Both fruit and vegetables can be done up in this way. As a rule the latter is more difficult to keep than fruit, and require much longer cooking.

Twelve quarts of raspberries require two quarts of honey. Put two quarts of the fruit in the preserving-kettle and heat slowly on the stove. Crush the berries with a wooden vegetable-masher and spread a square of cheese-cloth over a bowl and turn the crushed berries and juice into it. Press out the juice and turn it into the preserving-kettle. Add two quarts of honey and put it on the stove. When the syrup begins to boil, add the remaining ten quarts of berries. Let them heat slowly. Boil ten minutes, counting from the time they begin to bubble. Skim well while boiling. Put in cans and seal.

Of cherries, take six quarts, 1½ quarts of honey. Measure the cherries after the stones have been removed. Pit them or not as you please. If you pit them, be careful to save all the juice. Put the honey in the preserving-kettle over the fire until it simmers. Put in the cherries and heat slowly to the boiling-point. Boil ten minutes, skimming carefully.

Of pears, plums, and peaches, you take the weight of the fruit in honey. Plums should boil about fifteen minutes; peaches and pears, from twenty to thirty.

Blackberries are put up same as raspberries.

Of strawberries, take four quarts of fruit and 1½ quarts of honey. Boil ten minutes. From the time it begins to boil, skim well.

Of rhubarb, take equal weight of fruit and honey. Boil ten minutes.

Of apples, take two quarts of fruit and one pint of honey and half a pint of water. Boil twenty minutes.

Of corn, take two quarts, cut off the ear; half a pint of honey, one pint of water, four even tablespoonfuls of salt; boil twenty or thirty minutes, then put into jars or bottles.

Of tomatoes, take three quarts, one pint of honey, three tablespoonfuls of salt; boil the same as corn.

Of corn and tomatoes, take two quarts of corn, two quarts of tomatoes, one and a half pints of honey, half a pint of water, five even tablespoonfuls of salt; boil thirty minutes, then seal.

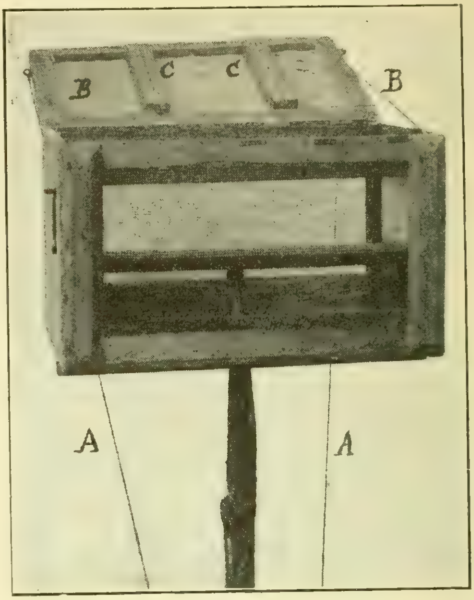
Grape, raspberry, blackberry, cherry, plum, and peach juices are made as follows: One quart of juice, one pint of honey, boil from ten to twenty minutes. MRS. H. K. BEARD.

◆

A Large Swarm-catcher

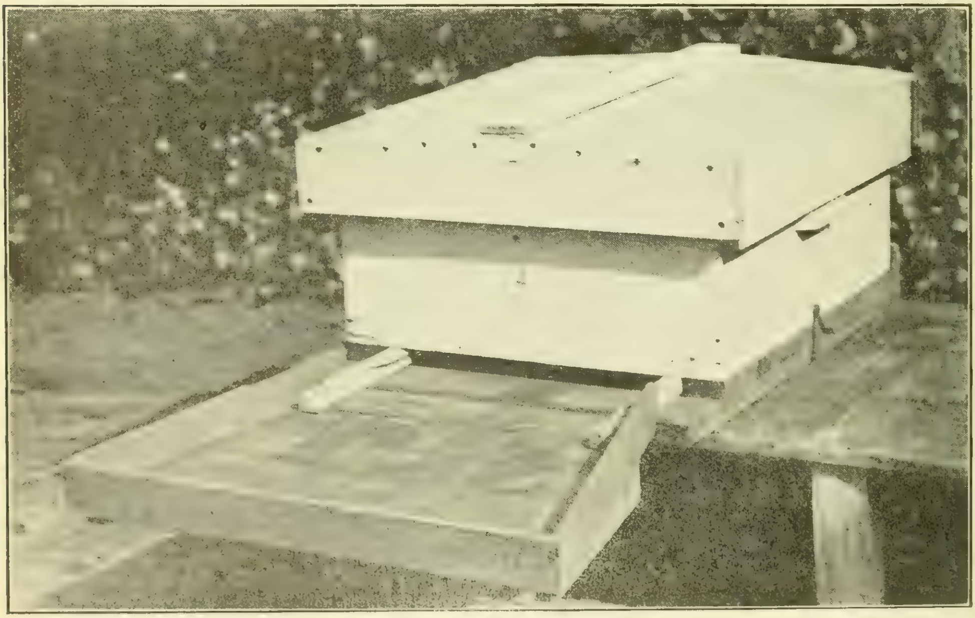
An objection often raised against the Manum swarm-catcher is that it is too small. It is large enough to get about a third of a swarm, and the rest of the bees will follow only when the queen is among those inside the cage. Now, the queen being the first to settle, she is usually in the upper part of the swarm; and as the Manum swarm-catcher is nearly always filled with the lower half of a good swarm the queen is generally not caught unless the swarm is a very small one.

For these reasons I take a large light box, as shown in the illustration. Inside, about 3 inches above the bottom, I have a board fixed with a hole in the center to correspond with another hole in the bottom, the pole being stuck thru both holes and thus held firmly.



Hamelberg's swarm-catcher.

The lid is automatically closed by means of a couple of rubber bands. A small cleat under the hinges keeps the lid from going



The swarm-board in position.

FROM THE FIELD OF EXPERIENCE

open too far. I hold the lid open until the bees are in, by means of a string.

When catching a swarm I push the box right under it, keeping the lid open by holding the string, and give the branch on which the swarm has clustered a vigorous push. The swarm having dropped in the box I lower it a little, at the same time letting go of the string, when the lid will close instantly, because of the rubber bands. I then fasten the lid securely with a hook and eye and put the device in the shadow near the place where the swarm settled and all the flying bees will quickly unite with it.

When hiving a swarm I do not like to dump the bees in front of the hive on a cloth or newspaper, for, on account of the holes and wrinkles, the bees do not have a smooth level place to walk over. For this reason I made a tray of thin boards with a rim about three inches high on three sides of it. Two projections on the narrower open side permit the tray to be pushed in the entrance and held right in position. The weight of the bees, when dumped on it, lowers the board a little, but this makes no difference; in fact, bees always prefer running upward, so the drop in the board is just right. There are never any stragglers left behind; and in a couple of minutes the swarm-board can be taken away. Whether it is to the credit of this way of hiving swarms I do not know; but for the last ten years, since I have been using this tray, I have never had a swarm desert its hive.

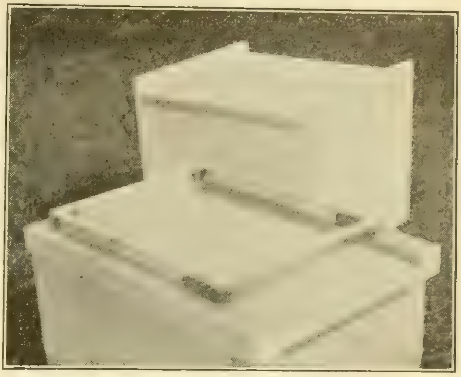
Soest, Holland. J. H. J. HAMELBERG.

* * *

Screened Ventilation at the Bottom to Control Swarming

Some years bees seem to put most of their energy into brood-rearing and swarming rather than in gathering honey. By experiment I have found that it is impossible to keep a hive and supers too warm, so long as the bees are given enough ventilation at the bottom of the hive and sufficient super room during the swarming season. There is nothing equal to prevention as a remedy for swarming; but if extra ventilation, for instance, is provided too late, after the bees have already made their plans to swarm, it is almost impossible to prevent them from swarming. In the method that I shall here describe, I have been able to prevent swarming entirely, even tho I run for comb honey.

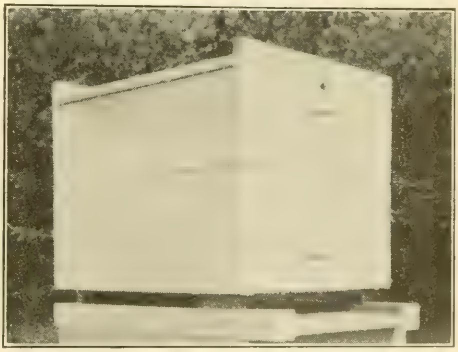
When my bees need one super I give them two—that is, I provide one super; but when they are working well in the one I put another on top for extra room rather than to wait until the bees really need the extra one.



The ventilator frame showing the openings at the sides.

I have tried providing extra ventilation at the bottom by raising the hives on blocks, as recommended by some, but I will never do it again. I think all the bees in town were in the hive in a very short time on account of the entrance all around.

There is no danger of robbing if a screen is used to close the openings at the side. I have frames the same dimensions as the hive-floors, a solid piece at the back, 1 inch high, and only corner blocks at the front with ¼-inch strip tacked on top of all to hold the pieces in place, and to which to tack the screens. When the screens are tacked to this strip there is a bee-tight one-inch space along each side of the hive, providing that much extra ventilation, but without chance for the bees to fly from the sides. The hive is raised from the floor,



The screened ventilator in position.

FROM THE FIELD OF EXPERIENCE

General view of D. J. Blocher's apiary, Pearl City, Ill. The grass is kept mowed all summer with a lawn-mower.

this frame set on, and then the hive is replaced. With this screen and plenty of super room I never worry about swarming. The bees seem to go up into the supers at night rather than to hang out on the front of the hive, as is usually the case; and if the supers are kept warm enough they stay there and work instead of crowding the brood-frames and planning to swarm. In some localities, when honey is always coming in freely, unscreened ventilation at the sides may work all right, but I shall not try it again in my locality.

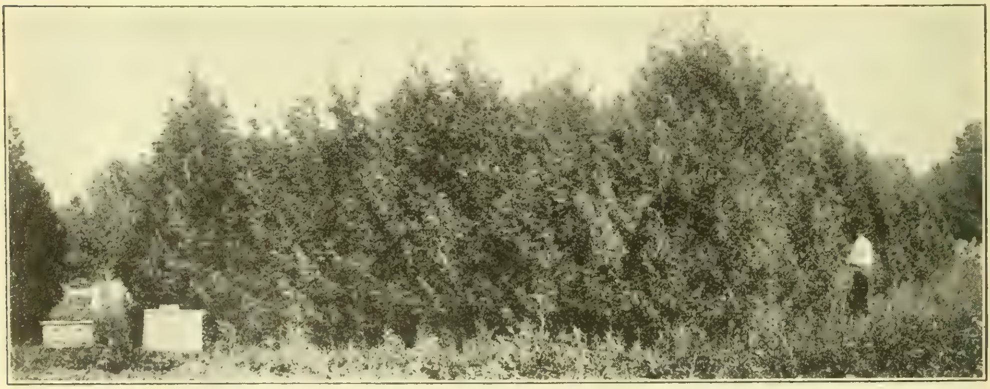
At certain times the bees try to close the screens with propolis. It is well to have a few extra ventilators on hand to exchange while cleaning those that are clogged up. The screens may be cleaned up by dipping in hot water or pouring hot water over them. The propolis comes off readily with a knife.

Hartford, Conn. G. T. Whitten.

What to Do with Swarms Galore

The season of 1916 was the worst I ever experienced for swarms. Up to the latter part of June it was cold and wet, then rains became less frequent and the weather warmer. About the middle of the month swarming began in earnest. There was much drifting, resulting in the doubling-up of many swarms, some of the largest of which would abscond with the least provocation. A large percentage refused to settle down after being hived. New swarms did nothing but swarm out again.

We quit returning new swarms to the parent location and put them in hives with only narrow strips of foundation in the frames. By not hiving on the parent location the swarm was not increased in size nor was the parent colony diminished, but we had to do it. We supplied lots of super

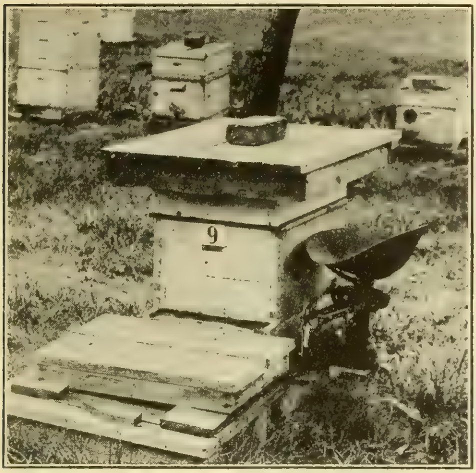


Evergreen windbreak planted on the north and west of the apiary, fifteen years ago.

FROM THE FIELD OF EXPERIENCE

room, both for the newly hived swarms and the parent colony, and gave plenty of upward ventilation. We trapped the queens of the new swarms. Cutting the cells in the parent hive did not stop the swarming except after much fussing as the season progressed.

The alsike harvest was then beginning. Alsike has been our main source of honey in recent years, as white clover has failed for about twelve years. When the alsike is cut our hopes are gone. Very little was accomplished by any of our colonies until the latter part of June, and our hopes vanished. Two wet summers, however, had brought out white clover everywhere in the pasture fields, and by July the rains had ceased and good hot weather came. The bees then quieted down and worked again in earnest on the white clover. This continued until the hot July sun killed the clover.



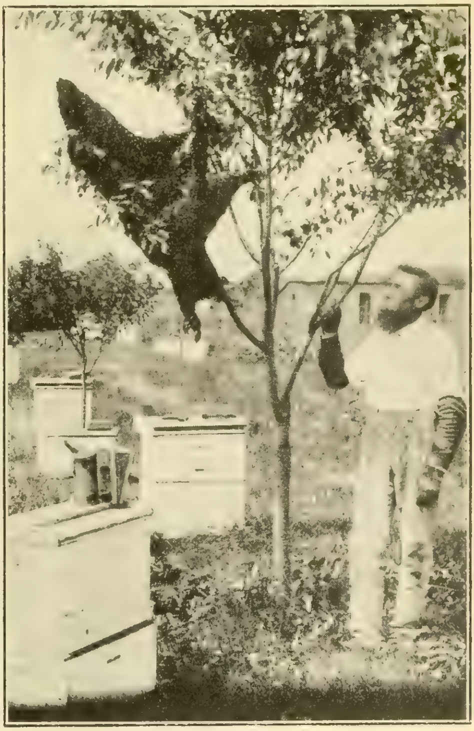
A hive on scales is a positive necessity in any honey-producing yard. If the one colony does not represent the average in the yard there should be two.

I would never think of conducting a honey-house without a scale hive. It is the pulse of the whole situation. Each day at sunset we know what was brought in; and if the unexpected happens in the field the beekeeper knows it and can act accordingly. The scale hive is our guide in putting on supers and restricting them as the season closes.

In hiving bees we take the shortest cuts possible. We make no noise while the bees are swarming—simply go about our work until they are on the wing. When they have clustered we are ready to do the hiving. We set the hive as close to the cluster as possible, and give the cluster a gentle jolt. This is easily done where the bees cluster low. If they are high in the air we cut off the limb, provided it does not damage the tree, and shake it gently in front of the hive.

Our bees sometimes cluster in such an out-of-the-way place as the trunk of a tree or the bottom of a currant bush. We put the hive as near to these as we can get it and then blow smoke from above, driving the bees down toward the hive until we get them on the run or on the wing. Brushing in such a place simply aggravates the situation.

If the bees are clustered on a limb that we do not want to cut, we shake it and hold a green bushy one near by and keep them off the first limb by shaking and smoking until they alight on the limb we supplied. Rather than cut a limb, fix up a scaffold, or use a basket, I have dropped swarms from quite a distance in front of the hive, and, by smoking the limb where the cluster was, have caused the remainder of the bees

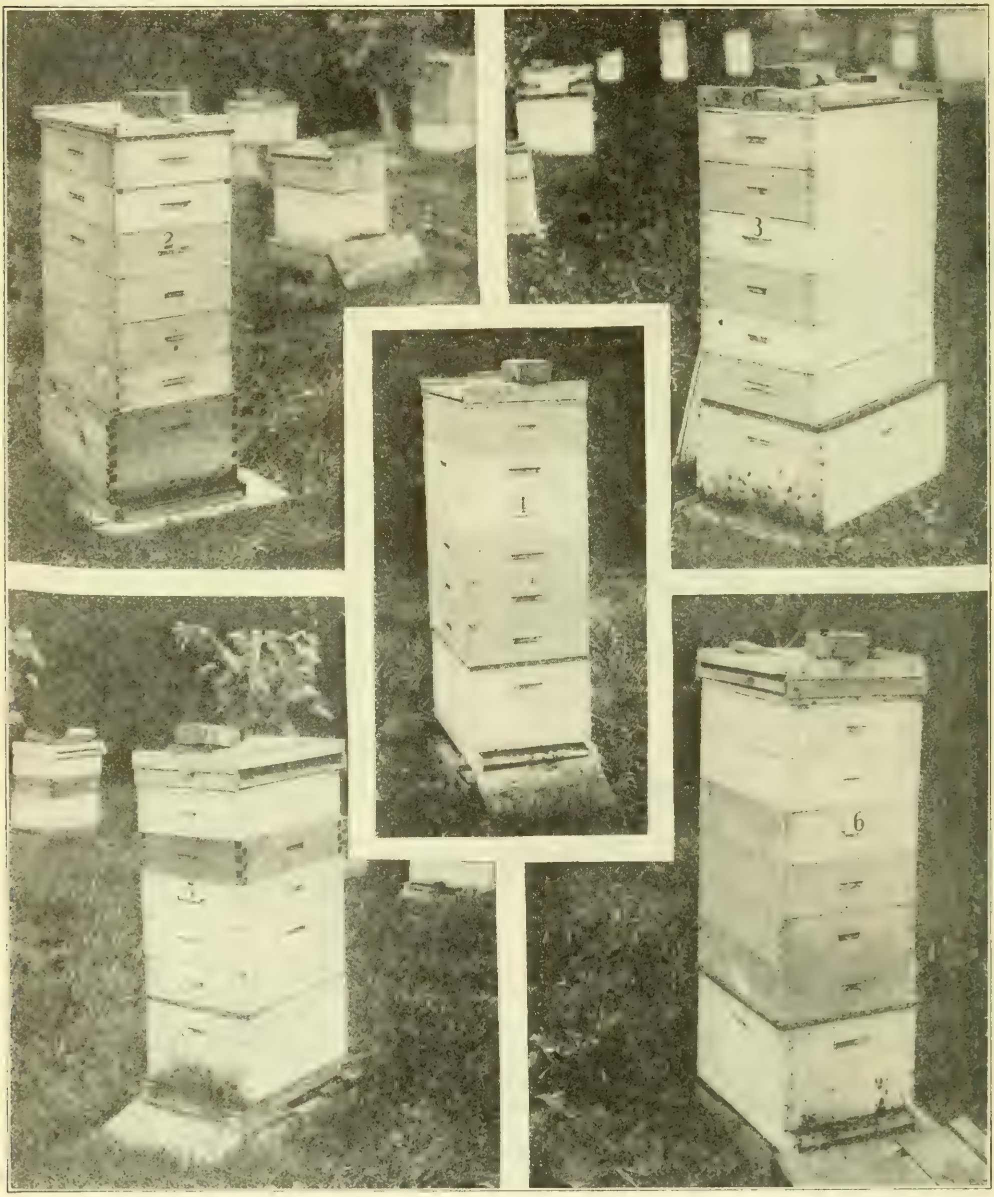


Two swarms that clustered together on the limbs of a small cherry-tree, making it necessary to tie the limbs for support.

to drop to the hive in their flight and enter. We often do this where they alight on the main part of a branch that can not be handled like a small one that can be shaken into a basket.

Before bees can be induced to enter a hive from a distant lodging-place it is necessary to get the bulk of them at the entrance; and if the queen happens to be there, all the better. Bees can just as easily locate part of their cluster in front of a hive from a distance as they can in any other location.

I no longer divide large swarms that have gone together, for the secret of success in



Some of D. J. Blocher's comb-honey hives at the close of the season. No. 2 swarmed June 24 and was hived in a 10-frame hive. No. 3 swarmed June 30, also hived in a 10-frame hive. No. 4 did not swarm. Nos. 5 and 6 were shaken into 8-frame hives on June 15.

quality and quantity of honey and the least expense lies in these mighty swarms. We hive all the bees in one hive, therefore, giving plenty of super room and upward ventilation. The new swarms are returned to the parent location. The parent colonies are taken elsewhere to reduce the chances of more swarming; and if such colonies are very strong, supers are supplied for comb honey. No one need to be afraid to put supers over parent hives, as all vacant space below will be filled first.

We frequently double up parent colonies to reduce expenses and increase the honey crop.

Pearl City, Ill. D. J. BLOCHER.

Bees, Boys, and War

Among the many efforts at "Conservation of resources" induced by the war, the increase of honey production by amateur beekeepers should by no means be overlooked. It is said that honey is to some degree taking the place of sugar in England, and that the Russian Government is helping to introduce scientific beekeeping methods in Russia. Boys and girls in America are everywhere enlisting in an "army of production" to raise fruit, vegetables, and poultry, and to help the farmers care for their crops. It is a most excellent movement, tending to health, wholesome interests, and practical efficiency; and no branch of husbandry is more likely to engage their enthusiasm than the care of bees.

Many farms that have only two or three neglected old-fashioned hives might produce honey in abundance if these were turned over to the son or daughter to be reorganized; and innumerable country and suburban places that have no bees should introduce them forthwith. It is not necessary that the owner should raise alsike or buckwheat. Bees range two or three miles from home, and in many places the roadsides alone furnish a vast amount of bee-pasturage, with their linden and locust trees, sumacs, wild raspberries, white clover, and goldenrod. With sugar at war prices, a few supers heavy with delicious home-grown sweets will be welcome next fall.

A boy of ten is old enough to be a valuable assistant in hiving the swarms and taking up the honey; and a year or two later he should be encouraged to invest in a hive, or be given a swarm of his own. His sister may do as well, or better, for many women succeed with this kind of "live-stock." Beekeeping encourages self-confidence, and stimulates habits of observation. It requires some pluck, deftness, intelligence, and watchfulness at certain seasons, but not that patience for monotonous labor that children have not. And bees are so amusing, and the hive is such a marvelous place! It does one good just to see the little ladies devoting themselves to the commonwealth; and a good treatise on apiculture, which is the prerequisite to beekeeping, is a capital introduction to biology and other sciences.

As for the established beekeepers, if every one would start an enterprising boy or girl in business with one of his early swarms he would be "doing his bit" to make his own town more nearly self-supporting. To increase our honey supply we need many enthusiastic amateurs. Backyard gardens should be supplemented by backyard beehives.

Redding, Ct. R. F. D.

How to Find what Hive the Swarm Came From

It is desirable to know just what hive a swarm issued from, so that attention may be given at once without the necessity of examining all the colonies in the yard. This is no light task when the hives are two and sometimes three and four stories high. Making increase by natural swarming is all right, especially for the apiarist who has but one yard. Moreover, there is real science in the proper swarming of bees, for it is the natural desire of the bees. They also work much better than when increase is made along unnatural lines.

If one of your colonies has swarmed, and you arrive soon after while the bees are still in the air, on examining the fronts of the hive you can tell by the number of bees crawling in the grass and gradually rising to join the swarm which hive a swarm came from. If you arrive too late to tell in this way, hive the swarm on one or two old combs; and when most of the bees are inside, brush off a cupful of bees hanging on the outside on to the ground in front of the hive. Then carry the hive away into a quiet shady place, and cover it with a sheet. Of course, be sure that you have the queen in the hive. In a few minutes the little

FROM THE FIELD OF EXPERIENCE

bunch of bees brushed off on the ground, seeking their queen, will rise in the air, hover about in search of her, and gradually return to the hive they came from. Whenever you see a nice little army of bees marching into a hive, fanning as they go, you have found the hive that originally cast the swarm. If it is in the middle of the day and the bees are very active in front of all hives, it will be difficult to tell, unless you dust some flour on the few bees brushed off on the ground.

Another way to tell which hive the swarm came from is to find the queen, put her in a cage and remove her, and the bees will then return to the hive they came from, provided no other swarm happened to be flying at the time. The first plan is the quickest, for it is not always possible to find the queen quickly; and, besides, there is then no increase, as the swarm goes back where it came from. Either plan will work when there is no other swarming going on in the yard. If other swarms are out, wait until about three in the afternoon when swarming is well over for the day. The dusting with flour is not always necessary but is helpful. I have found occasional bees with flour on their coats going into several different hives, which proves that individual bees from different hives join a swarm when they hear what is going on.

GEO. W. STRANGWAYS.

Elora, Ont., Canada.

* * *

Instantaneous Increase

One day I drove to one of my outyards intending to introduce a few queens. I found that one of the colonies that I had marked for requeening had relieved me of the job by superseding their queen, which left me with one queen that I had no place for. As many of the colonies were so strong that they could spare both brood and bees I decided to form a new colony, little thinking that by so doing I was stumbling on to a method of increase that I had often wished for—a method that would give me comb-builders, nurse bees, field bees, and a laying queen, the whole job being completed at one trip to the yard.

I placed the bottom-board and empty hive-body on a new stand with a cover and super cover near by. The entrance was plugged with grass, except a two-inch hole in the center. I then filled the hive-body with bees and brood from colonies that had plenty to spare; and, after putting on the cover, introduced the queen by the smoke method.

I returned to the yard after dinner; and because of the unusual amount of activity at the new colony my first thought was robbers, but I found the excitement was due to the young bees taking their playspell. Then I saw something else which is very unusual with artificial increase. Old bees were coming and going just as they do in any normal colony. My curiosity got the best of me; and, even tho I had just introduced a queen, I looked inside the hive. The queen was there doing business, and no one would have imagined that the colony had been made artificially less than six hours before.

With all other forms of artificial increase that I have any knowledge of, the old bees will return to the hive they were taken from, leaving the colony made up largely of young bees, too young to do field work. The only explanation I can offer why they do not do so with this plan is that they are taken from different colonies and are thoroly mixed up, and that they received so good a smoking when the queen is introduced that, when they are released, they mark the new location.

Before I left the yard I put on a super, and at my next trip I found the colony just as far advanced as any in the yard. Knowing full well that one trial does not prove the merits of any method I kept on trying, and the results were always the same. After repeated trials I found that the best time of the day to make the increase is in the early morning while the old bees are at home. In that way a better force of field bees is secured.

There is another factor that may have something to do with the success of this method. My queens are all raised and mated at my home yard; and when caged to be taken to the outyard I do not put in any escorts, neither do I provide any food, so the method of introducing that I use might be called a combination of the starvation and the smoke method. I have seen quite a number of unfavorable reports on the smoke method, but up to date I have had but one failure and then the fault was not with the method but with the man who was using it. I know that queens taken from one colony and put into another one inside of an hour are very easily accepted, but I have also used the plan with queens that have been in the mail from two to five days.

Moorestown, N. J. J. M. DONALDSON.

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No Swarming, tho the Bees in the Locality were Swarm-mad

Early in the spring I go thru my yards and see that all colonies have plenty of stores, enough to last four weeks. As soon as brood-rearing starts in earnest I spread the brood in the strongest colonies that I think can take care of it after it has been spread. Then I select the strongest colonies for comb-honey production and keep building up the rest for extracted honey.

As soon as the strongest colonies begin to be crowded, I take a ten-frame super, full depth, filled with full sheets of foundation; remove half of the brood and combs from a strong colony, shove all the brood to the center of the hive, leaving the queen below, and fill in the rest of the space with full sheets of foundation. I place the rest of the brood and combs in the center of the super and set this on top of the colony with a queen-excluder between. This I usually do about the first of May.

In about four weeks all the brood will have hatched in the super. Then I remove it and put two shallow comb-honey supers on the hive. I shake all the bees from the combs of the super removed, in front of the hive, then carry this super of combs to one of the hives intended for extracted honey. I put two or three combs of brood from this extracted-honey colony into the super above, replacing with empty combs below. If there is any tendency to swarm, this treatment certainly stops it. Furthermore, by this means I keep the strongest colonies busy drawing combs for the weaker colonies, while they are building up a working force.

By this time the white clover is beginning to yield nectar, and I have all colonies in good shape for the harvest. I have no further trouble with the swarming fever from those that are run for extracted honey; but I have to watch those run for comb honey and keep the bees provided with plenty of super room. I use full sheets of foundation in the sections and two bait sections for each super.

As the weather becomes sultry I raise the hives from the bottom-boards with cleats about half an inch thick, giving plenty of ventilation from below. That is a wonderful help in keeping down the swarming fever. Of course care must be used not to overdo the ventilation.

I have used this plan for two years and have never had any swarms, in spite of the fact that last year the bees in this locality seemed to be swarm-mad, some colonies swarming as often as four and even five times, and giving no surplus, while I secured an average of 100 pounds per colony. I aim to keep ahead of the bees at all times —in other words, to do something before the swarming fever gets started. I never cut cells, but at times I give bottom ventilation. If any cells appear I remove two or three frames of brood and replace with full sheets of foundation, using the brood to make increase or build up weak colonies if I happen to have any at that time.

Marion, Ill. D. PRIDE.

[At the conclusion of an experiment a beekeeper should consider whether the results are because of, in spite of, or incidental to the manipulation. He should also distinguish between cause and effect—of surrounding circumstances. Success in swarm prevention when all the bees in the locality are "swarm-mad" is a feather in any man's cap.—ED.]

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The fact that G. A. Readshaw's apiary is located only about 40 feet from the sidewalk of a busy street of Sharon, Pa., doesn't prevent him from making a success of it—nor the bees from swarming.

STRAY STRAWS

Dr. C. C. Miller

YOU ASK, Mr. Editor, page 359, whether there is not danger of starting robbing by shoving a comb of honey into the big entrance under the brood-nest. I should be sorry to advise anything that would get a beginner into trouble; but really I can't think of any way of feeding less dangerous, even for a beginner. It takes only a fraction of the time it would to open the hive and hang the comb among the other combs, and that rapidity gives robbers less chance. Likely you think the naked comb on the floor will be unprotected. But immediately the entrance is closed all but a square inch or less, and by the time you have the entrance closed that comb of honey will be covered by bees the same as the other combs at the entrance. And it will surprise you how soon the honey from that comb will be carried up into the combs above if there is room for it there.

MRS. ALLEN, you want to know somewhat definitely, p. 376, at what stage of the season the first equalizing of brood occurs. A bit hard to answer. After the colonies have been on their stands long enough to have brood started in each, say about a week, a hasty examination is made the first flying day to see if any colony is queenless, and to note which colonies are weakest, and incidentally to see if any need feeding. Then the weakest colonies are newspapered over the queenless ones. Perhaps the best answer I can give as to the time when the first equalizing is done is to say whenever colonies are strong enough. That will be when the strongest have five or six brood each, and may be before fruit-bloom, or it may be near the close of fruit-bloom. You can't very well go wrong about the time if you *never reduce a colony below four brood.* There's no fixed rule as to amount of stores in spring, unless it be to crowd in all there's room for early, and not to allow any empty combs later.

ALLEN LATHAM, after years of experience with different substitutes for pollen, has come to the conclusion that cottonseed meal is the best he has tried. He has come to another conclusion that is rather startling—that is, that feeding such substitutes is a matter of no gain but distinct loss. If you read the two pages he has written about it, in the *Domestic Beekeeper*, page 172, you will see he makes out a strong case, giving actual experience. Briefly, there are two reasons for the harm: the weakening of the nurse-bees by the digestion of food unsuited to their digestive organs, and the forced activity of the bees when they should stay at home.

G. C. GREINER has been perhaps the strongest opponent of the use of full sheets of foundation in sections. He believed the quantity of honey might be thereby increased, but at the expense of quality. After many years of experience and much observation he is now thoroly convinced of his mistake, and recants in the most whole-souled manner (*American Bee Journal*, April, 129). He now thinks it a mistaken notion that sections with a natural base are superior, is converted "into a thoroly convinced full-sheet and bottom-starter advocate," and says of what he calls his former notion, "It has cost me tons of honey during the past decades."

"ALLEN LATHAM asserts that, in combat between a laying queen and a virgin, the virgin is *always* the winner because of her greater agility. Dr. Gates says this is not always so, and that he knows of instances where the fertile queen won. How is this?" —*American Bee Journal*, Jan., 1917, p. 13. It is not said that Dr. Gates saw the combat; and unless he or some one else did, there's no proof. If a strange virgin were introduced, the workers would take a hand, and the virgin come off second best. In a fair stand-up fight I should always expect to see the virgin the victor because of vigor; and yet in one case in a thousand I can imagine a white-livered virgin overcome by a red-blooded laying queen.

PROF. JOHN H. LOVELL has made a notable contribution in *American Bee Journal* for April, p. 115, to bee literature. He proposes the division of North America into 12 nectar or honey-plant regions, based on topography, climate, native vegetation, and the geographical distribution of honey-plants. State lines are utterly ignored; and it is interesting and instructive to study the map giving the 12 regions with accompanying details as to honey-plants to be found in each.

S. D. HOUSE says bees go further for strong-smelling blossoms, because these can naturally be scented further away, *American Bee Journal*, April, p. 121. Of course. By the same token they will also go further to blossoms on the windward side.

SIFTINGS

J. E. Crane

May is indeed the month of apple-blossom. Commencing in April in the South, it lasts till June in the far North. What could be more fitting than to give a picture of the beauty of blooming apple-trees in colors on the cover page of Gleanings for May? How true to nature, with the green grass and shadows below, the blue sky above, and the white and pink blooming trees between! I thought I could see two birds in the front tree, and it required no great stretch of imagination to hear the merry hum of the bees.

* * *

One of the neatest tools we have found recently is an electric wire-imbedder. It puts the wire right down in the center of the foundation and covers it with wax so you can hardly tell from which side it was imbedded. There may be others as good as this one put out by the Dadants, but I have not seen it.

* * *

I was much interested in E. T. Atwater's "Shaken-swarm plan perfected," as given on page 352, placing the brood-chamber over an empty one to prevent absconding. If it will work as well in other sections and in other hands it will remove one of the serious objections to the shaking plan of management.

* * *

At how low a temperature can combs be handled without injury to unsealed brood? Some claim it injures a colony even to lift one corner of the packing in early April. I find some beekeepers object to an inspector opening their hives unless the temperature is near 70°. It seems to me this is being over particular.

* * *

The article by Lewis P. Tanton, page 335, May, on destructive spraying, is open to criticism. While I agree with him that too early spraying might kill the pollen grains or the delicate organs of flowers, yet if delayed until the calyx closes and turns down it seems too late, as it is difficult at this stage to spray so as to reach the base of the calyx where the larva of the codling moth is supposed to swallow its fatal dose of poison. I believe also that the calyx and base or flower does not grow after the fruit has become fertile. When fertilization is completed the function or use of the calyx is at an end, and it slowly dries up. We find the calyx of a mature apple scarcely larger than when it held the pistil and stamens in its bosom. It is only the ovary of an apple blossom that swells and develops into a fruit.

* * *

I see our friend E. G. Baldwin is still of the opinion (page 292, April) there is nothing more wholesome for a newly introduced queen than a good "licking." It reminds us of a man whose wife pounded him. His friends remonstrated; but he said, "Let her alone, for it amuses her, and doesn't hurt me." So this "licking" of the queen amuses the workers, and doesn't hurt the queen; indeed, it proves a most admirable way of introducing a stranger.

* * *

That article on bees and fruit on page 332, May, by E. R. Root, reminds us that more and more the value of bees in the production of fruit is appreciated. We are having more and more calls for bees for this purpose. But let us be careful not to assert that fruit can not be produced without the agency of insects. There appears to be a great variation in the ability of fruit-trees to fertilize their own flowers. Some seem to require insects on their blossoms, while others require pollen to be brought from some other variety.

* * *

WHY THEY DIED.

The best time to study the wintering problem is in the spring. Every colony that has died should be examined with great care and the cause ascertained, every comb being removed to make sure of the cause of the trouble. Of 13 colonies placed in the cellar, one was found dead when taken out this spring. On examining the combs they were found bare of honey. The cause and remedy for such is apparent. Of some 180 in our home yard wintered out of doors on their summer stands one was found queenless and dead. Another had almost entirely new white combs; and the bees, being unable to keep up the temperature, had dysentery and died. Another had made the winter nest at one side of the brood-chamber, and starved with an abundance of honey on the other side. Still another had changed its queen in late summer, and had too few bees to withstand the long winter.

OUR FOOD PAGE

Stancy Puerden

ONE Sunday, several weeks ago, there sat in our church a father and mother who had just come from the car after bidding goodby to their youngest son, a boy of twenty, a boy well and favorably known to every one in our town. He had joined the hospital unit which left Cleveland for France that afternoon, leaving college to enlist. I shall never forget the look on that mother's face. It was not that she was not brave. She was perhaps more composed than any of the rest of us, for the minister in his opening remarks had alluded to the young man's having gone. I shall not try to describe the expression of her face. You have seen it on some mother's face near your home, and will probably see it many, many more times. The world is full of mothers with such faces now. Every day we hear of more of our brave boys enlisting in their country's service.

And now what are we women going to do for our bit? We have been getting pages and pages of good advice, and we have been charged with being wasteful and extravagant in our kitchens. For instance, Secretary of Agriculture Houston authorizes a statement estimating that we waste food amounting to more than $700,000,000 annually. That sounds incredible, but it is only $7.00 per person a year; or computing it on a family basis, allowing five persons to the family, it makes a waste of 67 cts. per family a week, or a little less than ten cents a day. Even that seems a high average to me; and yet if the figures should be cut in two the sum total would still be appalling. It looks as if we deserve the scolding, doesn't it?

We must not confuse the need for preventing waste of food with the financial problem. If you can afford porterhouse steak, mushrooms, etc., daily, it is still your privilege. But don't waste a crumb of whatever food you use. There is an actual food shortage in the world.

Let us consider a few of the ways in which we can save food in our homes. First, take good care of all raw materials as they come into your house, protecting them from mice, insects, or decay. Second, encourage your family to eat enough for physical and mental efficiency and no more. Third, don't spoil food in preparation by burning or careless cooking. Fourth, use whole-wheat flour instead of white at least a part of the time. Dietitians have long urged this change, and we are told 28 per cent of the wheat is wasted in making white flour, or, to state it in another way, over 100,000,000 bushels of wheat. Fifth, boil potatoes in the skins and peel just before serving. Both material and food value will be saved. Sixth, save the water in which vegetables and rice have been cooked for soups and sauces. It is rich in valuable mineral salts. Seventh, utilize every drop of skimmed milk. It is a better balanced food than cream, as cream is only the fat, while skimmed milk contains protein, minerals, and carbohydrates. Eighth, save and render every bit of fat. Ninth, dry in the oven and grind scraps of bread left from the table. A good cook can think of dozen of ways to use them. And when you entertain your friends, serve them a simple, well-cooked, well-balanced meal. Don't encourage overeating by serving too great a variety when little children are starving in Belgium.

And now, Uncle Sam, we women of the United States would like to have you notice that we are taking our scolding for being wasteful and extravagant in a beautiful spirit. We are going to practice such thrift that a self-respecting pig would not find even light refreshment in our garbage-pails. We are going to do our best to have our families largely feed themselves and have something to spare by garden-making. If, as we are told, this war is to be won by bread bullets, you will find us doing our share and rejoicing that we have the opportunity to help. And may we respectfully voice the hope that before harvest time you may decide not to let hundreds of millions of bushels of grain go into drinks instead of food. We also think tobacco-fields would make beautiful war-gardens.

It would never do to finish this page on thrift without mentioning honey. Doubtless you already know our government is urging beekeepers to increase their honey production as much as possible to help out the sugar shortage. We are told that the nearer our table we can produce our food, the better, as the transportation problem is going to be almost as serious as the food problem. Therefore, let me urge again this month that you take the best of care of your little garden musicians, the bees.

Beekeeping as a Side Line

Grace Allen

"BEEKEEPing as a side line is a curse to the industry"—page 264, April GLEANINGS. Yes, that is really what it says. I read it several times to make sure. I do hope Mr. Bales smiled as he wrote it. I didn't smile a bit when I first read it, nor while I wrote a long and spirited reply. But when my bump of humor woke up (bumps do go to sleep occasionally you know), I tossed the "retort courteous" into the fire, and smiled across to Mr. Bales, clear from Tennessee to California!

Now if *ignorance* had been labeled the curse to the industry, there would have been a complete unanimity of opinion, for all reading beefolk, mainliners and sideliners alike, would agree heartily. Of course we sideliners all admit frankly that there is a great deal of ignorance and unprogressiveness among the non-professionals. Why, haven't we ourselves a neighbor who recently boasted to his neighbors, "I tell you what—beekeeping is *the* thing! Now I've got just two hives—well, I've reely got three, but one didn't do no good—'n I didn't do a single thing to 'em last year, 'n I got ten full pounds of honey"? But shall the efficiency of all sideliners be judged by that of our neighbor?

Seriously, it is true that in the ranks of the non-professional is a high degree of intelligence and skill and success. We have the honor of including men of education and intelligence among our number—college men and ministers, lawyers and doctors and editors, and men of trained business grasp. And some women! And many a man has reached the mainline only by first following patiently and perhaps stumblingly the humble tracks of the side line. Some beekeepers may have been born professionals, as it were, because their fathers were that before them; but surely most of them—I recall some great and famous names—have achieved their present dignified and substantial positions by the old and honored route of beekeeping as a side line.

In this department we want to record, one after another, the successes of non-professional beekeepers, and shall be glad to have a generous supply of these interesting stories. But we are also going to look at the other side of the shield, and admit the failures and mistakes and countless problems. In 1914 Mr. N. Person of San Francisco, caught a swarm of bees and then bought four colonies from a neighbor for $5.00—three in old hives, one in a box. He fed them to bring them thru the winter. They all died, except the one in the box. This one he transferred late in February, smoking and handling "according to the books." "The contents, probably a handful," writes Mr. Person, "left thru a crack, but the queen came back in about fifteen minutes and settled on my hand. I put her on the frames I had fixed up, and the poor fellows tried to start housekeeping again. I realized I ought to help them, so I gave a frame of bees and brood from my other colony which was very strong." Most of this brood died from chilling, so he gave another frame, and the next day found the queen outside, dead. Later he bought a queen and started a nucleus. This queen cast three swarms, all of which wintered successfully and stored surplus next season. One swarm was hived on drawn combs and "put on a stand a couple of hundred feet from the mother hive. In about forty-five minutes they were going in a steady stream back and forth to the old hive, robbing, and carrying away everything."

By 1916 he had ten colonies. He got a good honey crop and left each hive with plenty of stores. Early in February of this year they started breeding "to beat the band." But then came storms and cold weather, queens stopped laying, and brood was thrown out. Not till April did laying begin again, and by that time three queens had died, one had swarmed, entered the wrong hive and been killed, and most of the old bees were dead. So now "I am buying bees to build them up again," he writes, "and all this with plenty of sealed and unsealed stores."

Now, that is a chapter of accidents and mishaps, but he will win out yet.

In our own yard this spring I had to kill a queen because not one of her eggs hatched into larva. We bought her last year in late August, and, after finding her laying early in September, I had left her alone except to see that there were enough stores, and so had not discovered this unexpected no-goodness. The first examination this spring made me realize she was backward, as there were eggs only, in only one comb. The second examination, about two weeks later, still showed only eggs, tho by that time in three combs—not a larva in the hive. Of course that sealed her fate, and I killed her.

AROUND THE OFFICE

M.-A.-O.

HERE'S a new idea—one that might get results, which is more than can be said of a lot of "ideas." It was written to a beekeeper friend of the M.-A.-O. (it was written in deadest earnest, too) and its generally business-like air and all-pervading benevolent spirit justify its reproduction here—so here it is: "I have bees in outyards and thefs have stolen 5 hives and robbed others to the extent of 215 lbs. of honey. It is impossible to watch them, and I ask what do you think might be the results of the law if I would place arsnic between the midrib or between two sheets of foundation and place them in cirtin hives espeshialy for thefs and if they should stealit from the bees, eat it and die and it should be proved just as I have stated do you suppose I would be in any danger of loosing my scalop." How direct and clear the thought! How simple in conception! How bold and yet artful in strategy! How calculated for the general weal as well as for the intestinal linings of honey-thieves! I must say that I like it—its general sans froid and lofty purposefulness. The other editors of GLEANINGS don't agree with me—but I do. I can't help believing in the man's sincerity. Just one caution, however, viz.: Never mind your "scalop," but pay considerable attention to avoid getting those "hives espeshialy for thefs" mixed up when it comes to saving out honey for home consumption.

* * *

A visiting beekeeper a few days ago blurted this right out in the office: "A beekeeper, if he isn't being stung by a honeybee or a honey-buyer, is trying to sting some other beekeeper." Wasn't that a devil of a thing to say right in The A. I. Root Co.'s office? Yes, sir, despite dear old Mr. A. I. Root's possible objection to the strong word, wasn't that the very devil of a thing to say right in the office here?

* * *

Just to show how honey-producers themselves contribute to the demoralization of the honey market and prices: A honey-producer in western Ohio last winter sold his big honey crop at retail for $1.00 per gallon in cans—a net price of less than 8 cts. per pound. Extensive honey-dealers had then been paying more than this in carload lots. Another honey-producer — almost a neighbor of the one aforementioned—sold his crop in 10-lb. pails at $1.25. The current retail price then—and easily obtainable— was $1.75 per pail. A group of honey-producers selling in territory close to this man—but who knew their business—sold their honey in 5-lb. pails at $1.25 per pail. The uninformed honey-producer is the man who knocks down honey prices. He's the fellow that spills the fat in the fire every time. He's also generally the chief high squealer about low honey prices and the poor oppressed beekeeper.

* * *

The Man-Around-the-Office didn't fully expect to get it past Mr. A. I. Root—I mean the cuss words in the letter of that fellow that wrote a big supply house about failing to send the crank with his extractor and added a postscript saying that he had just found the crank in the bottom of the box. It was no use explaining to A. I. Root that the cuss words had to be used to illustrate the kind of man that would write such a letter. Nosiree. "Uncle Amos" was on to me and my flimsy argument, and he kept on me till I wished that he would get off. I also wished that I had'n'adidit. I guess, too, that he was right about it. But that mad-all-over letter (cuss words and all) of the fellow who didn't find the crank the first thing in the top of the packing case, tickled me so that I couldn't resist the temptation to pass it along to the unregenerate readers of GLEANINGS. I won't do it again —not while Mr. A. I. Root is anywhere this side of Bradentown, Fla.

* * *

Most of those delayed orders for the delayed A B C and X Y Z of Bee Cultures have been filled—thanks be! But the mails or freight or some other agency of the Old Nick occasionally still delay one longer even than the printer did, and then the A. I. Root Co. gets a whack that is a real whack. This came from a mad man down in Massachusetts who had had a copy promised him in March at latest, and had not got it by May 1: "Perhaps if you do not March in April you May in June and don't Ju-lie about it." Yet some people imagine the lives of these Root persons to be all happiness, ice cream, and chocolate sundaes! How would you like to get one like that? And this isn't saying anything about what Ernest got for printing the information that dandelions "produce little or no honey."

BEGINNERS' LESSONS

H. H. Root

LESSON NO. 5—THE FIRST WORK.

IN the last lesson we considered ways and means for getting a start with bees—where to get the bees, in what form, etc. At this time especially, the reader is urged to review not only the last lesson but the first three as well.

One of the first problems that confronts the beginner after securing his bees is where to put them. Conditions vary according to circumstances. One living in the country or in the suburbs can do no better than to have the hives in an orchard or in the partial shade of some tree. Too much shade is as bad for bees as for human beings. Some producers go so far as to say that no colonies do well if they stand in the shade. A little protection from the sun in the hottest part of the day, however, is advisable.

A beginner living in a city or town is often perplexed to know what is the best place for the bees. If they are located in a back lot they may cause some annoyance to neighbors, especially if the neighborhood is thickly settled. There is no objection to a back-lot location provided there is a high fence, trees, or buildings that will cause the bees to fly high, especially in case of streets or alleys close by in the direct line of flight. One should anticipate any trouble by preventing the conditions that may cause it.

If there is no high fence or hedge, or even shed or building to act as a shelter from cold winds, also to cause the bees to fly high, it is frequently advisable to put the hive in an attic or on some flat roof easily accessible. A flat tin roof, especially if painted a dark color, is apt to be a pretty hot place, therefore the hives should surely have some shade, for there is danger of the combs melting down.

There is no objection to the attic other than the inconvenience of going up and down stairs; but it is important to have the hives set close to the outside walls with an entrance cut thru so that the bees can go in and out at any time. There should be a window near by to give plenty of light, and this window should be on hinges so that it may be swung entirely out of the way, or else it should be so arranged that it can be taken out when the bees are being looked over. If this precaution were not taken, those bees that fly from the combs toward the light would merely buzz up and down on the window and die, being unable to find their way back to the hive. If there is no glass in the window the bees will fly toward the light and will eventually find their way back to the regular outside entrance. Attic beekeeping has this additional advantage, that the hive does not need to be painted.

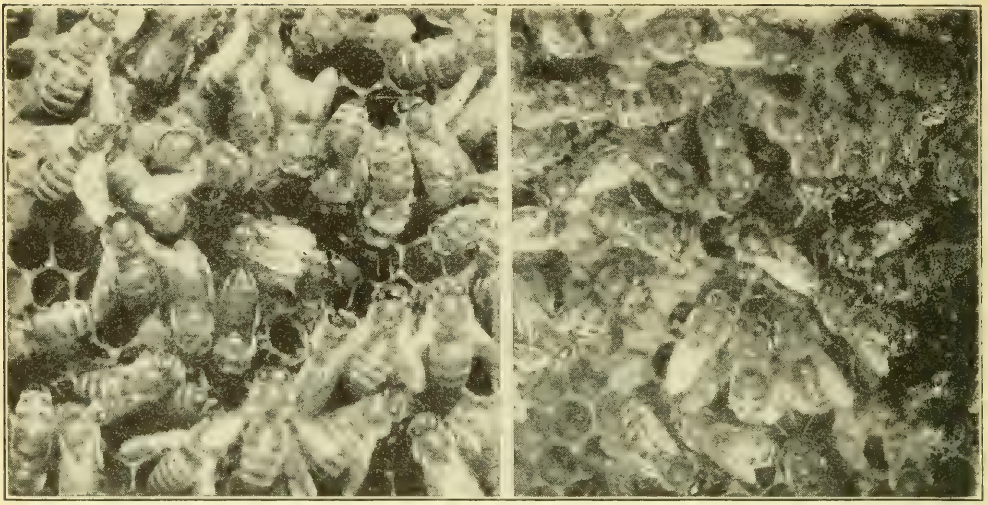
If the hive is located in the back lot, make sure that the entrance is turned away from any nearby path or sidewalk. In this connection it may be well to remark that nothing makes the bees madder than to have some one stand right in front of the entrance. The returning bees, noticing a change in the appearance of the hive because of the obstruction, will often collect in quite a cloud. It is just as important to see that the bees in their line of flight—that is, the direction they usually take when leaving the hive, are not annoyed by moving objects.

THE FIRST WORK.

Most beginners overdo the first work. Pulling the hive all to pieces and distributing the combs around just for fun is an expensive kind of pleasure. At the earliest opportunity, however, the combs should be looked over carefully to make sure that there is a queen, that she is laying, and that the conditions of brood-rearing are normal. Even as early as March in most northern localities there should be brood in all stages—not a large amount of hatching brood, it is true, but some at least; and in April, May, and on into June, the amount of brood-rearing should have steadily increased. If the queen is not prolific, or if she is defective in any way, as shown by irregular work, she must be replaced; otherwise there is no chance of surplus honey.

A good queen starts laying in the central part of the comb, gradually enlarging the circle as conditions warrant. She should lay in regular order one egg in a cell with almost no cells skipped. If a colony is made up of old bees largely, the queen at first will be greatly hampered, for there are no young nurse bees to care for the brood. Under such circumstances, therefore, the queen should not be blamed for not starting in brood-rearing with a rush.

Some time in the spring, before the colony becomes too populous, the queen should be clipped. This work should be done in the middle of the day when most of the field bees will be outside of the hive. It is then much easier to find the queen. The beginner especially should stand or sit with the light falling over the shoulder, and he should pick out one of the combs in the

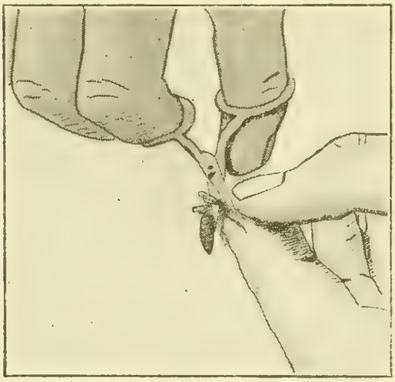


Queen poking her head into cell to see if it is polished ready for a new egg.

Queen laying. Note the circle of bees around her in mute adoration.

center of the part of the hive containing the most brood, looking over both sides of it carefully. If the queen is not there this comb should be stood on end by one corner of the hive, and the other combs should be looked over just as carefully.

When she is found she should be clipped as shown in the illustration. In picking her up, the thumb and forefinger of the right hand should grasp the wings, when the queen can be transferred to the left hand. When she is placed on the ball of the left forefinger and the thumb lightly held against the back of her head and thorax she will grasp the finger with her legs and the wings will stick straight out so that it is easy to clip off two-thirds the length of the wings on one side. Some clip the left wings odd years and the right wings even years. This furnishes quite a check on her age. A timid beginner should practice on drones first, for the drones cannot sting. The queen, while she has a sting, never uses it except against a rival queen.



The best way to hold the queen while clipping.

As soon as possible the combs should be looked over to make sure that there is enough sealed honey. A beginner may find it a little difficult to know just how much sealed honey constitutes enough. No colony at any time should be allowed to have less than three to five pounds of sealed honey; for when brood-rearing is at its height honey is being used very rapidly indeed; and if the bees are running a little short they will retrench, thus curtailing brood-rearing at a time when it is exceedingly important that everything be done to build up and not reduce the strength of the colonies.

A good beekeeper sees to it the fall previous that his colonies are supplied with more than enough stores to last thru until the main honey-flow begins the following spring; but a beginner who is just starting in the spring does not have this advantage, and must feed, therefore, if the bees are running short. Unnecessary spring feeding should not be practiced by beginners. For emergencies there are a number of good feeders on the market, any one of which is suitable for the purpose. A small feeder that will hold a quart of thin syrup, made by mixing two parts of water and one of sugar, is large enough.

Many beginners in their first enthusiasm try to invent something, especially a feeder. More worthless feeders have been invented than all other contraptions relating to beekeeping put together. The beginner must always remember that there have been a good many hundred thousand beekeepers who have traversed the same ground before him, and it is more than likely that his idea is not new. One thousand one hundred and ninety-four patents have been issued to beekeepers for various hives and appliances. Any man with a finger sawed off can count on the fingers remaining on that one hand, without the thumb, those patents which have amounted to anything commercially. All this does not mean that a beginner's idea is useless, but it does mean that there are about one thousand chances to one that his plan is not as good as others described in standard text-books.

Some beginners ask, "What can I do to make my bees swarm?' Those having more experience ask, "What can I do to keep my bees from swarming?" It is natural for colonies in good condition to swarm, as the many articles in this number of GLEANINGS clearly show. There are ways for making increase by artificial methods; but the average beginner, while he should read up on the subject in text-books, should not try these plans until he has had a little experience. Increase by natural swarming is the safest at first. Usually some one can be found near by who will attend to the hiving. If the queen is not clipped the bees are almost sure to cluster, near by, first. If she is clipped she will be found in the grass in front of the hive, usually with a little knot of bees with her—and the bees of the swarm will return. As soon as a swarm issues from a hive having a clipped queen, the queen should be found and caged, a new hive put on the old location with its entrance facing the same way, equipped with frames having full sheets of comb foundation. One drawn comb, however, is quite an advantage. The parent hive should be set on a new location with its entrance turned the other way. When the bees return they will run into the new hive and the queen liberated among them. Queen-cells will have been started on the combs in the old hive so that in a few days the old colony will have a new young queen. Any supers that were on the old hive at the time the swarm issued should be put on the new hive, on the old location, containing the swarm. Under ordinary circumstances the bees will start work in them with a rush. No bees work with quite the vigor and enthusiasm as do those of a newly hived, natural swarm.

In comb-honey production the supers with the little boxes for the storing of honey are not as attractive to the bees as larger combs; and their tendency, therefore, unless "baited" by a good many partly filled sections held over from the year before, is to crowd the honey into the brood-combs, curtailing the space for the queen to lay, and bringing on the crowded condition so conducive to swarming. An expert can do much toward overcoming this state of affairs, but it is an exceedingly vexing problem for a beginner.

In extracted-honey production it is much easier to control swarming, since a super can be put on and the queen encouraged to lay in it before the swarming time arrives. Later on she can be confined to the first story with a queen-excluder (Lesson 3); and when the brood hatches in the super the bees will proceed to store honey there. An experienced beekeeper may be able to manage without a queen-excluder; but it is questionable practice at best, and a beginner should not attempt to get along without it. Plenty of super room, with never a chance for the bees to get crowded, almost insures success, other conditions being favorable.

Even in extracted-honey production, the entrance should be as large as possible.

Swarms are not always hived as easily as this.

JUST NEWS

Editors

It now seems certain that the cold weather prevailing over practically the whole country in the early part of May not only delayed all forms of vegetation but foiled the plans of northern queen-breeders who were hoping to get started in queen-rearing early. Northern breeders, therefore, will be unable to start shipping out queens as early as usual.

* * *

Apiculture is now being taught in twenty-two colleges and universities of the United States, according to Dr. E. F. Phillips, of the Bureau of Entomology.

* * *

B. Anderson, County Agent at Winston-Salem, N. C., is of the kind that does much to promote beekeeping in his territory. He has a " bee club " to which he sends out information and encouragement whenever necessity arises. His letters written to the beekeepers about Winston-Salem are always timely and always deal with the immediate problems before the beekeeper. If every county agent in the United States were of the B. Anderson kind, the beekeeping business of America would begin jumping.

* * *

The Michigan legislature at its late session passed an appropriation bill which will give the State Inspector $1500 per year more than previously, to use in hiring deputies for bee-inspection work. This money will be available July 1. The services of a deputy have been secured. Until the new appropriation becomes available not a great deal can be done excepting the inspection of the yards and vicinities of the queen-breeders. This work is required by law. The money provided under the old law is about exhausted, and nearly all promises to inspect before July 1 will have to be canceled until the new appropriation becomes available. The new law in Michigan makes it a misdemeanor to keep bees in a box or crossed-comb frame hive, and provides a penalty of from $5.00 to $25.00 for each offense. The State Inspector will enforce this law, but will give reasonable time for transferring the bees.

* * *

Honey-producers will be interested from a money point of view in the following " tip " sent out by Dr. E. F. Phillips, Apiculturist of the United States Department of Agriculture: " In order that the beekeeper may be assisted in placing his honey where it will be most needed, this Department proposes to furnish two kinds of information. The Bureau of Crop Estimates will issue in May, July, September, and November honey-crop reports and crop prospects. The Office of Markets will issue at intervals the available data on honey-crop movements and prices from actual sales at wholesale centers. These two lines of information will be furnished the bee-journals, and the crop reports already go to many beekeepers. Arrangements will be made to send the reports of the Office of Markets to interested beekeepers. Every beekeeper should hold his honey until he has received these reports, for they will be free from bias, and more accurate than most quotations."

* * *

The Bureau of Entomology at Washington reports that the Texas beekeepers are coming to the front nicely on combless packages. They have over 10,000 pounds ready to go to Idaho and Colorado and there will soon be more. The bureau notes that " this is a fine response."

* * *

The Bureau of Crop Estimates puts the winter losses in Idaho at 46.6 per cent, and states that there are only 60 per cent of the working colonies in that state now that there were a year ago. This is a tremendous shrinkage of bee power in one of the most important honey-producing sections of the country.

* * *

GOING AHEAD WITH THE WORK.

The Apicultural Department of the Bureau of Entomology at Washington informs Gleanings that the work mapped out at the national conference of beekeepers and instructors held at the national apicultural station at Drummond, Md., is being vigorously pushed. Literature urging the largest possible honey production this year, with helpful suggestions, has been sent to the beekeepers of 18 states and to all the county agents in the United States. Nine thousand honey-crop reporters have been called on for service. Reports on freight embargoes in New England and on the glass-container situation have been submitted to the Secretary of Agriculture. Organization has been completed for gathering and publishing, by

July 1, honey-market reports for the whole country. An earnest effort is being made to secure a special appropriation from the Agricultural Department for use in advancing apicultural interests. A large number of beekeepers' associations and state workers have been induced to circularize members of their organizations to speed up honey production in this war year.

* * *

U. S. GOVERNMENT'S REPORT ON NUMBERS, CONDITION, AND WINTER LOSSES.

The Bureau of Crop Estimates of the United States Department of Agriculture issued a "Honeybee Report" on May 1, based on the returns from inquiries sent to about 9000 honey-crop reporters all over the United States.

According to the Government's estimate, winter losses of bees for 1916-17 have not been quite so heavy as during the previous two years, being 10 per cent this winter compared with 13.3 and 12.6 per cent in 1915-16 and 1914-15, but were very severe in many Rocky Mountain States, amounting to almost half of all colonies in Idaho. The heavier losses are reported as being due to the long winter and extremely low temperatures.

The total number of working colonies on hand this spring is 4 per cent greater than last year, increases of from 5 to 12 per cent being shown in most of the North Central States, and reaching 18 and 20 per cent increase in Illinois and Nebraska, while in most of the Atlantic Coast States from Maryland northward the increases range from 10 to 25 per cent. Increases of from 5 to 10 per cent are reported from most Southern States, but corresponding decreases occurred in North Carolina, Florida, Mississippi, Texas, and Arkansas. Extremely heavy winter losses in the northern and central Rocky Mountain States prevented a more material increase in the number of colonies for the country as a whole.

The condition of colonies as to healthfulness and strength is 91.1 per cent of normal, slightly lower than last year, and 4 lower than the average of the past four years, being good to excellent in the Atlantic Coast and North Central States, embracing most of the white-clover belt, but poor in most of the Gulf States, particularly Texas, and in the Western States generally.

The condition of honey-plants averages 82.5 per cent of normal for the United States, which is about 13 below both last year and the four-year average. The conditions are particularly poor in Florida, Iowa, Nebraska, Texas, Idaho, Oregon, and California. The prospects in California for sage honey are very poor, owing to severe fall and winter drouth and a late spring. Orange is more promising, and conditions may improve from recent general rains in the southern sections of the state. Serious winter-killing of clover and alfalfa is reported from many sections, particularly Nebraska, Kansas, and Illinois. The late spring over most of the country is, to some extent, responsible for the low-condition figures on honey-plants.

Fruit prospects are, at this early period, very favorable; and if good crops are finally realized, and the price of sugar should remain high, the narrowed margin between the cost of honey and sugar may be expected to encourage a larger use of honey for preserving fruits.

* * *

A MORE GENERAL USE OF FIBER CONTAINERS.

"The Official Bulletin" of May 15, now published by order of the President, contained the following that may interest those who sell honey in small lots on home markets, for the practical fiber honey-container is now almost a certainty:

"Plans for lessening the use of tin cans for products non-perishable, thus releasing large quantities of tin for use in the manufacture of cans as containers for seasonable foodstuffs, have about been completed. If the public will co-operate, there will undoubtedly be sufficient supply of tin cans to care for the perishable crops for the summer. To this highly necessary condition the individual may assist by accepting goods in fiber or paper instead of tin whenever there is no deterioration in the change. It is exceedingly important that there be tin to preserve the summer vegetables and fruit for use next winter. The housewife who helps us provide that supply by lessening her own demand for tin-packed goods is undoubtedly 'doing her bit' in a patriotic manner. Some of the products which it has been suggested may be successfully packed in fiber are coffee, tea, tobacco, soap powders, cleaners, shoe and metal polish, soaps and shaving preparations, talcum powders, alum baking-powders, spices, condiments, raisins, prunes, and various drugs and chemicals.

"For home use, in putting up jellies and preserves, the fiber containers may be used, and will be found cheap and satisfactory. Information as to where they may be obtained will be gladly furnished inquirers who address the Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, or any of its branches in the several cities of the country."

GLEANED BY ASKING

E. R. Root

E. F. B., Connecticut.—In opening hives in the spring there is often found too much honey. When six frames out of ten are filled with honey for the greater part, and the others are somewhat cluttered up with pollen, honey, etc., so there is not proper room for brood, what would you do in that case? Is it best to set aside these honey-frames and insert new frames with full comb foundation? Do you think that bees ever carry honey from the brood-frames to the super, or is the super honey always brought directly in from the fields? I have had some super honey that seemed to me not fresh, but as if honey had been carried up from the main part of the hive.

A. As a general thing there is not much danger of having too much honey in frames with honey and pollen in the brood-nest in the spring. Sometimes later on in the season we have a condition where we say the queen is "honey bound," but there is no trouble along that line in the spring. The condition you refer to is a little above normal but should not be disturbed. If you were to put in frames of foundation you would spread the brood-nest and do more harm than good. As a general thing the bees will move the honey from one part of the brood-nest to the other in order to give the queen more room to lay eggs during the breeding season. It is always a splendid thing to have lots of stores in the hives, for then the queen will breed more and the bees will see that the stores are properly moved.

Yes, they move them from the brood-nest into supers, and sometimes from the supers, during cold weather, down into the brood-nest again.

A. B. S., Ohio.—I have some colonies that are not going into the supers, and others have begun work in sections. What is the trouble?

A. Something will depend on the strain of bees. Some strains will go upstairs more readily than others; but the usual explanation of the condition mentioned is that the colonies that persist in staying downstairs are not strong enough to go above. Another explanation may be that the honey-flow is too light. If there is considerable room in the brood-nest, bees will not go above until the lower part of the hive is filled and combs begin to whiten.

W. N. T., Massachusetts.—I live in a locality where there is practically no clover. I wish to go into the business extensively. Would you advise me to move?

A. Yes, providing you intend to make bees your sole means of livelihood. But if your main income is from your business or profession, and you are keeping bees for pleasure as well as for profit, we would advise you to stay where you are. If you decide to move, seek some locality where lime is abundant, and where clover will grow readily. If possible, find a place where farmers are growing alsike extensively. Those who grow different legumes are usually located in a place where the soil is alkaline.

Some farmers scatter lime on their farms to make up the deficiency. If you can, with your clover locality, find a good place lying near some stream, where there is plenty of fall flow, it will be so much the better.

Alsike-clover regions where there are no bees are pretty scarce, and you may find it necessary to move into a western country. If you do, buy a round-trip ticket, taking in the western states, with the privilege of a stop-off. Hunt up the beekeepers in the locality and find a place that is not already occupied, especially one where irrigation is starting, and where alfalfa will be one of the main crops. In some places you will find beekeepers a little reticent, especially if they think you intend to locate in their territory. In some cases you can buy out a beekeeper including his bee range.

J. C. B., Illinois.—Is there such a thing as having a colony too strong for the honey harvest?

A. If there are too many bees and too much brood in all stages, and hive boiling over with bees at the approach of the harvest, there is danger of premature swarming. Such a colony may waste its efforts in loafing and getting ready to swarm when a colony of less strength would get down to business and start storing in the supers. In the production of extracted honey, if there are plenty of supers with empty combs there is not much danger of having a colony too strong, providing a super of combs is given in time. In the production of comb honey it is best not to have a colony too strong; and to forestall that condition a little equalizing can be practiced to advantage.

In relation to this general proposition, it is but fair to state that not all beekeepers are agreed; and the question of locality will have some bearing. If the honey-flow comes on very gradually, increasing in the mean time, bees will be more likely to start swarming than if the flow comes on with a sudden rush. But even here again locality will have a bearing. If possible one should consult some expert beekeeper in his own locality, and be governed by his advice.

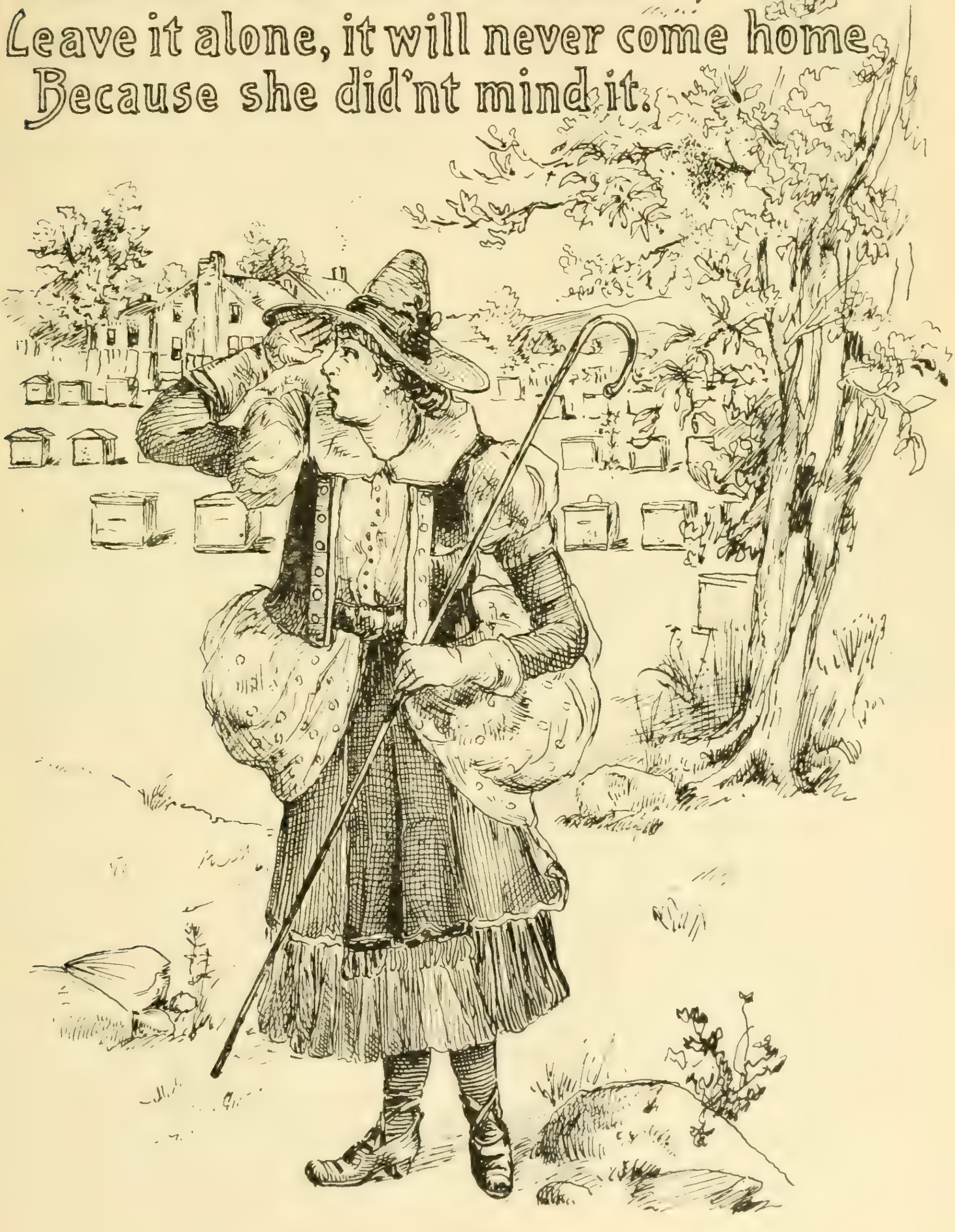
P. G. M., New York.—I have heard it said that black bees produce whiter comb honey than Italians. Is that true? and if true would you advise me to continue with them?

A. It is true that comb honey from blacks is a little whiter; but the difference between that produced by Italians and blacks is not enough to be noticed by the general public. In fact, European foul brood is now so prevalent that you would do well to Italianize after the honey harvest when queens are cheap. The blacks will be almost sure to contract European foul brood sooner or later.

Mother Bee NURSERY RHYMES

By M.G.P. (Mother Goose Plagiarized.)

Little Miss Charm has lost her swarm,
And can't tell where to find it;
Leave it alone, it will never come home,
Because she did'nt mind it.



GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

ALL the farmers and near-farmers in this section predicted that the excess of rains in February and March meant a drouth later, and they hit it right as to April. Day after day and week after week went by without a drop of rain. Then, just as locust swept into full bloom, the dry spell broke. In fact, in several counties it fairly *smashed*, bursting into a hailstorm that ruined gardens and tore the locust bloom to bits.

On Sunday, April 22, when we came home a roundabout way so that we could get a walk by the creek and across the commons, we were surprised to find a few, a very few, white-clover heads nodding at us, with the black-locust trees only just coming into bloom. That was good time for the locust, and fully two weeks earlier than I have happened to see clover before. However, one white-clover blossom doesn't make a honey crop; and while just in the yards around Nashville it has opened up nicely by now, May 7, the stock that runs loose on the commons keeps it cropped discouragingly close. In other counties, it is reported as coming late and slow, and thru all this part of the state the dry April has hurt our prospects materially.

At present, in this early May, we are going thru a run of cold gray weather, with bees flying very little—some days not at all. I have found dead drones on the alighting-boards, with drone brood outside—a sight not normally scheduled for May in Tennessee. A wet spell, then a dry spell, then a cold spell—what does that spell?

* * *

County Agent Ebb Thomas delivered an interesting address to the Davidson County Beekeepers' Association at their second meeting. He stressed the grave food situation, and the necessity for the maximum of production, and called on the beemen to do their bit. And so they will. Mr. Bartholomew voices the same thought in one of his circular letters: "Not all of us can do military service, but there are plenty of things to do in addition to carrying arms. Do your share to aid in the campaign for increasing the honey crop, and, by so doing, help 'do your bit.'"

* * *

Two such beautiful covers—the dandelions of April and the fruit-bloom of May!

Are we not fortunate to have work that throws us into touch with Nature, with all her wonders and her beauties and her mysteries, her "divine things more beautiful than words can tell"?

* * *

Recently I read a long article reprinted from *The Medical World.* It was entitled "King Candy," and gave interesting testimony to the great value of candy and other sweets to conteract the habit of alcoholism. As I read it, I wished they had gone a step further and called attention to the superior virtues of honey. Candy is surely less harmful than alcohol, and honey is more beneficial than candy.

* * *

THE BEE AND POULTRY DEMONSTRATION TRAIN.

On a sunny day in late April we went to the country, one of us leaving a prosy office behind, and the other a still prosier house-cleaning job. The day was filled with dogwood blossom and black-locust bloom and the sweet, sweeping scent of them. We lunched under old trees, wonderful with new-born leaves, and then, at 2:00 P. M., went to the siding by the little country station and entered the Auditorium Car of the N. C. & St. L. Ry. Co., where the lectures on bees and poultry were being given. On April 9 they had left Nashville, making three and four lecture-stops each day for one week. The next week they rested, then out again for another week. Mr. Bartholomew, the federal bee expert, and Mr. Crane. the federal poultry expert, both of the University of Tennessee at Knoxville, made the entire trip, while Mr. J. H. Judd, the N. C. & St. L. Special Agricultural Agent, and Mr. A. D. Knox, the Assistant Agricultural Agent, were each out part of the time. The private observation car, with sleeping-rooms and library, and the Auditorium car, were dropped off at the siding by some train, the lectures delivered, questions asked, and friends made; then some other train picked them up and ran them on to some other siding at some other station to repeat the good program. It was on the last day of this second week that we went out.

There were pictures of different breeds of poultry on the walls of the car, and bee supplies and model chicken-coops up in front by the speaker's table, while the rest of the car was filled with chairs—arranged as in any public hall—even tho the aisle was necessarily narrow. When we entered, on time, as we thought, in spite of having stopped by a wayside pump for a drink and wash-up, Mr. Bartholomew was already speaking. He urged the splendid possibilities of Tennessee beekeeping, the wisdom of producing honey at this particular time of high prices, and the necessity for improved methods of apiculture. He made a strong plea in favor of the production of extracted honey, advocated shallow supers for this section, described the interesting prism experiment for testing the purity of honey, shooed queen-excluders right out of the hive, even when running for extracted, urged practically unlimited room, put the second super on top of the first and the third on top of the second, and renewed his always-convincing arguments for winter packing. In this connection he told about Judge Cook, of Chattanooga. It seems that Judge Cook decided to put four hives in a winter case last fall; and this spring when he unpacked he sent word to Mr. Bartholomew that those four colonies were already up to full summer strength, any *one* of them being equal to any *six* of the unpacked colonies! In the face of Dr. Phillips, Mr. Bartholomew, and Judge Cook, will there be an unpacked hive of bees in Tennessee this fall?

Mr. Crane followed with an interesting and instructive talk on poultry-raising that I wished I might have heard several years ago. After the lectures we were escorted to the other car, where Mr. Knox played host most graciously with some refreshing sparkly lemonade. And here we learned that so much interest had been shown, and so much enthusiasm developed, that they had decided to run on for still another week. They had talked to as many as 650 people in one day, more than 5000 in the two weeks. And the kiddies came too, as you can see in one of the pictures Mr. Bartholomew so kindly gave us. At one wide-awake station they had to hold an overflow meeting outside, as the car could not contain them all. Seven hundred inquiries about beekeeping had reached Knoxville as a result of the first week's run.

Then the next week, a Nashville bee-supply agent told Mr. Allen that something surely had happened to the business. Orders were coming in so fast it was bewildering. "And they're most of 'em beginners too," he confided; "I can tell it by their letters!"

* * *

Bees athrill with summertime, humming thru the haze,
Bringing gleam and witchery to all the sunswept ways,
How you set the tender heart of Mother Earth acroon
With radiance and romance from the rhythmic heart of June!

Flocking to the poultry and bee special. The kiddies came too.

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

MAY 4, and still winter is lingering in the lap of spring. The weather has been unusually cold all thru April and May to date, and for the last three days we have had snow flurries with small piles of snow still lying in fence-corners.

This sounds "frigid," without doubt, to our southern friends, and yet in a letter just received from a well-known beekeeping friend in Texas he says that many of their honey-bearing sources were so frozen as to be useless for the bees, and that the weather there is unseasonably cold too. He further says that he is feeding both honey and pollen to make it possible to rear queens; and in order to have drones for mating purposes, queenless colonies have to be supplied with drone brood. He estimates the spring loss of bees in his part of the state at 25 per cent, and says that colonies are still going backward.

After reading this letter I once more came to the conclusion that no country has a monopoly of the good or bad things common to man. While we have no doubt been more or less impatient with our extra long spell of cold weather, yet after all no harm in particular has been done, as all vegetation is dormant and the bloom will come along later all right, no doubt. Bees carried a little pollen for the first time this spring on April 18. Since that date they have been out of the hives only a few days, and I do not think an ounce of nectar has been brought in yet.

Almost every day people say to me, "This weather must be hard on the bees;" and while it certainly has not been ideal for the colonies to build up, yet it might be worse. Experience has taught us that, provided the colony is strong and has lots of good stores, it will not suffer so much from steady cold weather that stops all flying as it would if weather were slightly warmer and bees were enticed out for pollen. With intermittent spells of sunshine and cool winds and clouds, many bees are lost. Judging from external appearances, bees are standing the long cold spring quite well indeed, and prospects are fair for a crop, as alsike, altho damaged somewhat by heaving, has a fair stand and should come along all right with rains and warm weather.

* * *

Dandelion "yields little or no honey"—April issue, page 252. Is this a question of "locality," or of mistaken identity? Almost every year we hear of some beekeepers getting some "dandelion honey" from extra strong colonies. Personally, I think the bulk of this early honey comes from willow and fruit bloom here in Ontario; but I am bound to admit that we have already extracted honey out of supers before clover flow came on that had the dandelion flavor without a doubt. Would the abundance of pollen from dandelion, coming in at same time as honey from willows, be the cause of this dandelion flavor? Possibly but hardly probably; and I feel sure that at times the dandelion here in Ontario yields quite a lot of honey in addition to the bountiful supply of pollen that seems to be always to be in demand by the bees.

* * *

Every beekeeper going to a convention in the future should pocket a copy of that letter from "Mary," p. 116, before leaving home. Surely the sketch is true to nature, for is it not true that "every beekeeper has his pet theory"? and often the convention is the place that he looks to as a means of "getting this off his chest." One man has a pet hive, another a pet method of doing some particular job in the apiary, while still another will take the floor half a dozen times to extol the virtues of some pet kind of packing material. Yes, members of the O. B. K. A. do those things just as they do on the other side of the line, for, after all, human nature seems the same whether you live north or south of the great lakes. Let me repeat, that letter is a "gem," and personally I think of taking a copy of it with me when I go to the next convention.

* * *

Much has been written about outdoor wintering, and as to how far north this method can be successfully practiced; and while I have been in favor of the outdoor method I must confess to being surprised a few days ago to learn that bees are being wintered outside at a point much further north than I had deemed possible. A friend spent the New Year holidays up in New Ontario, at a point about 450 miles due north of Toronto, and he told me on his return that some extensive beekeepers up there were wintering outside exclusively. All going well, I want to get in touch with these beekeepers and find out what success they are really having; for if bees can be successfully wintered that far north, surely some of us need to revise our ideas a little.

* * *

WHAT SHALL THE PRICES BE?

Speaking of prospects of a crop naturally brings to mind the question of probable prices. If prices are to advance in proportion with other food commodities, beekeepers must prepare their minds to think of figures away above any price ever received by any of us of this generation—bread, 20 cts. for a three-pound loaf; potatoes $3.00 a bushel, and hard to get at that figure; bacon 45 cts., and butter 40 cts. a pound. These are just a sample of prices familiar, I suppose, to all of us. In the face of these figures a well-known firm in Ontario recently sent out circulars intimating that, because of the goodness of their heart and their great interest in beekeepers, they would buy the crop in advance, whether small or big, and pay the munificent price of 10 cts. a pound, they to supply the tins and the beekeeper to fill all honey into these said tins, which were to be of the 2½ and 5 pound sizes. In view of the fact that many last fall sold for 10½ cts. in large barrels, f. o. b. shipping station, it is needless to say not many will tumble over one another in accepting this firm's *big offer.*

IN TEXAS

By F. B. Paddock, State Entomologist

THAT the beekeeping industry of Texas is not fully appreciated is one of the facts brought out by the series of meetings held by the Texas A. and M. College and the State Entomologist in co-operation with Mr. Kennith Hawkins of the U. S. Department of Agriculture. These meetings were arranged primarily for Mr. Hawkins, in such a way as to allow him to see all degrees of the industry. Places were visited where but few bees were kept and there was no local beekeepers' association; next, places where local associations exist and beekeeping is just beginning to develop; and, finally, places with local associations and a highly developed industry. Naturally considerable attention was given to the flora in each section. It was found that in some localities the flora was most excellent for keeping bees; but the people were ignorant and indifferent to the possibilities of the industry. In another section it was found that several beekeepers were attempting to develop beekeeping, but the flora was not sufficient. In one section it became very evident that floral conditions are almost ideal for beekeeping, but the industry is only well started. This section is seldom heard of in beekeeping; but the prospects are certainly as good as any in the state, and there is every reason to expect a great development there in the next few years. It was hard to find the principal honey-producing section in such a condition as it is this year on account of drouth and late spring freezes.

At every place the beekeepers who attended the meetings were intensely interested in solving their local problems. Much time was given to the discussion of these matters, and in every case the beekeepers felt that they were better able to meet their conditions after attending the meetings. Needless to say, the field meets were enjoyed by all. These are in keeping with the modern idea of instruction, "to do is better than to say;" a demonstration is more easy to comprehend than a lecture.

In this connection, meetings were arranged in two counties between the County Agricultural Agent and the local beekeepers' association to hold schoolhouse meetings to demonstrate modern beekeeping, primarily with a view to eliminate box hives. There is no doubt that this step will mean much for the industry in those counties. Reports of the first meeting are already in and they were considered a great success.

Many of the prominent persons in Texas beekeeping were met at those meetings. It is always interesting to know and talk with those of whom one has read as being leaders in a certain line of work. Several of these men are well-known queen-raisers, others are large honey-producers.

The net results of these meetings have turned out far more than were anticipated. Not only have the places visited asked for a return meeting, but many other places have expressed a keen disappointment that they were not selected for this first series of meetings.

HONEY PROSPECTS.

Conditions over the state generally have improved materially since our last report. Local rains have occurred over most of the state which have been a wonderful help. There is still a very great deficiency in moisture, and many of the honey-plants will suffer accordingly. In this locality prickly ash was in bloom from April 15 to 25, and the bees worked very hard on it during that period. The mesquite bloomed from April 24 to May 10, but the bees did not seem to work hard on it. California privet bloomed from May 1 to 10. The period was very much shortened by dry weather. The bees worked very hard on it. Horsemint came into bloom the first week in May. The flow will undoubtedly be very short on account of the extreme drouth. In the southern section the mesquite flow has been short, but the second bloom is expected to yield well. In the western section the mesquite has not done well; huajilla has done very well, and catclaw promises to yield well. In the eastern section the conditions have been very favorable this spring. Rattan and holly have done unusually well, and some beekeepers have put on the third super and are now extracting. In this section the best honey-plants are yet to yield, which indicates an excellent crop of honey for that section. In the northern section the bees are building up well.

GREAT INCREASE IN COMBLESS-PACKAGE SHIPMENTS.

There has been developing in this state during the last two years a great trade in pound or combless packages of bees. In the usual way this trade has not been advertised but several beekeepers sell a thousand pounds of bees in this way during the spring. In the southwest section of the state, where the honey-flow was cut short, some of the beekeepers made an additional effort to dispose of their bees in this way, to reduce the cost of feeding and to realize some revenue. Now comes the suggestion from Dr. Phillips that, due to the excessive winter losses in some of the northwestern states, the extra bees of this state should be disposed of to the beekeepers of those states. A movement is already under way thru the State Entomologist's office to make an inventory of the possible amount of bees that will be offered for sale under such conditions. Orders have been invited from the above-mentioned states, and it is hoped that Dr. Phillips' idea—not an idle bee in the United States—will be partly realized in the movement.

INSPECTION FUNDS TO BE CUT.

It is to be regretted that the special session of our legislature, now convened, is in such a retrenchment mood. Reports indicate that the funds asked for by Director Youngblood, of the Experiment Station, for foul-brood-eradication work will be cut at least 50 per cent. In making his estimates Director Youngblood presented to the legislature the least amount that could be expected to carry forward the work properly. It is hard for some to see the wisdom of leaving such an industry as beekeeping in Texas with such little protection as the legislature is inclined to give. In these days of great conservation of food what can keep better returns than to make it possible for the bees to gather more nectar which is otherwise lost?

MYSTERIOUS DYING.

There has been reported a peculiar case of bees dying in large quantities in the western section of the state. In one case of twelve colonies, almost every bee in the hive died in one yard in sixteen hours; but in this yard, at the same time, there were eighty other colonies in good condition. At this time apparently there was nothing for the bees to work on. It is stated that the bees acted as tho poisoned, tho in some cases they appeared to be paralyzed. In 1912 a similar complaint was received, and some investigations were made in the affected apiaries. One of the owners stated positively that a neighbor had placed calomel in a tank where the bees were in the habit of getting water. This year the trouble ended as mysteriously as it started, as was the case in 1912.

AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado

THE beekeeper who has courage, credit, and common sense will be the winner this season. While the advance in supplies has been sharp, the advance in the price of honey has been almost as pronounced. What is needed is every hive full of bees. On account of severe losses this will not be accomplished; in fact, the West is very short on bees this season. The losses have been heavier than reported in the May bee journals, and prices secured will be somewhat higher than some figures mentioned in our May journals.

The greatest asset the West possesses is the lateness of the main honey-flow. This enables the colonies to become populous and store large amounts in the aggregate, but scattered over two months or more duration. An unsatisfactory location is one where the heavy honey-flow comes on very soon after the bees have come out of winter quarters.

When our honey-flow comes in July and August, we have May and June to build up our colonies. The later the flow, the better the crop, especially if the flow keeps improving as the season advances.

This season is very late—so late, in fact, that the losses are not over with at this writing (May 7). We have just had nearly two feet of snow following a honey-flow from dandelions. It is still cold, and our losses of colonies will be heavy. Many colonies of fair strength have already succumbed and more will follow. With a large amount of brood to care for, a colony's resistance to cold seems to be very small.

COMBLESS PACKAGES OF BEES.

With the poor season reported from Texas, it is possible for the Texas beekeepers still to make some profit this year by selling bees to the Rocky Mountain beemen. By the time this is read, doubtless thousands of packages will have been sold in the mountain region, where the losses have been more generally heavy than for years past. The first ten days in May were frightful, snow and cold chilling much of the brood and destroying many, if not all, of the weak colonies. The bees were gathering nicely from dandelions a few days previous!

If our beemen have sufficient funds or credit so that all hives could be refilled, it would naturally increase our crop, but probably less than half of the hives will be filled this year in spite of the good prices assured. Honey-producers are more discouraged than for several years past, partly because of the extremely low prices secured last year and severe losses this past winter.

WHAT IS THE TROUBLE WITH THE ROCKY MOUNTAIN BEEMEN?

Honey production is not as uniformly profitable in this part of the United States as it should be. This can be proven by one very simple test. Here is the test: What do bankers think of bees and beekeepers as risks? Most bankers do not care, from past experiences, to loan generally to honey-producers, for the reason that these producers do not secure uniformly good crops; marketing is too slow and difficult, and bees are so prone to die; and then an outfit is practically unsalable. Banks are just as liberal in their loans to our uniformly successful beemen as they are to our uniformly successful farmers; but the percentage of successful beemen is smaller than the percentage of successful farmers.

It is the duty of all interested in bee culture to establish beekeeping on a substantial, profitable plane. To do that we must have better-trained beekeepers. Our problem in the West is a complex one; but the rewards are satisfactory for those who have solved the questions of production, purchasing supplies, and marketing honey. None have yet solved the question of wintering satisfactorily, and the bee-disease situation is not yet controlled as it should be.

Most of our successful beemen have lost half or more of their bees at some time during the past ten years. The loss runs from ten to twenty per cent every year. Quite a few of our most successful beemen expect to lose heavily each winter, in this way having empty hives for increase each year. If all colonies were wintered, the extra care necessary to handle out-apiaries successfully would be more than our beekeepers could give with the size of their operations. The truth is, our beemen do not want to work hard (sixteen hours a day) for more than three months each year.

Our problem is to prove that one man can manage five hundred to a thousand colonies more profitably by wintering all of them and then controlling and keeping down increase, than to lose ten or twenty per cent and use the empty hives for the increase. If it is more profitable to do this, we want to know it. The arguments in its favor are that larger crops can be harvested per colony from well-wintered stocks, and that the frequent severe "knock out" winters, such as the Rocky Mountain region has just experienced, would be largely avoided.

The arguments against the plan are numerous:

1. It is too expensive to prepare and pack colonies for winter — the situation with many being stated that it is impossible—they have not the money nor the credit.
2. The work necessary is more than one man can do, and help cannot be had.
3. After a severe winter and heavy losses, crops are generally good and large increase is possible, often refilling all hives in one season.
4. Severe winter losses keep the best locations from becoming grossly overstocked.

When summing up these arguments the really wideawake beekeeper will come to the conclusion that the most profitable course will be to winter all of his colonies of normal strength in the best possible manner, and the careful manipulation will turn into honey what energy otherwise would go into swarming.

If every set of hives or comb is made to pay a good dividend, it will not be difficult to secure funds for some more equipment necessary to secure best the stability of the enterprise. We must cut out the extremely large leaks in our business, and wintering losses are among the heavy ones.

BETTER PROTECTION FOR WINTER.

Mr. George S. Demuth, of the Bureau of Entomology, recently spent a few days in Colorado on his return from the Northwest. Mr. Demuth had been investigating wintering conditions, and had some very interesting observations to relate.

Wintering in Idaho has been carried on much the same as in Colorado, largely because many of the Idaho beemen were originally from Colorado. Winters in Idaho are more severe than with us, and thoro wintering preparations are more necessary. Most of the losses in Idaho were caused by honey-dew in the winter stores.

Mr. Demuth expressed surprise at the ease of wintering here, but believes Colorado beekeepers should seriously test the heavy packing of colonies with a contracted entrance. Undoubtedly this will be tried out this coming winter in various parts of the state. Our heaviest losses are caused by the solid granulation of the honey in the hive. In these districts it will be necessary to extract all honey, and winter bees on sugar syrup before much success will be accomplished, as packing heavily will not accomplish very much toward preventing granulation in the hive.

Another interesting fact to Mr. Demuth was the lateness of our honey-flow, allowing of a long period of building up during April, May, June, and part of July, our main surplus coming in August and often part of September.

HEADS OF GRAIN FROM DIFFERENT FIELDS

The Beekeeper Answers

BY GRACE ALLEN

What are the silvery streaks I see
Slanting across the mulberry tree?
Spirits in tune with the rapture of things—
Bits of June that have taken wings.

What are the drops of light I see
Drifting across the persimmon tree?
Gallant crusaders to far-off things
That yield but to faith and unfearing wings.

What are the flaming darts I see
Flashing across the magnolia tree?
Wild wee lives that are drunk on things
Like June and clover hearts, beauty and
wings!

Full Sheets of Comb Foundation or Only Starters

I am a beginner and very enthusiastic, for I just love to work with bees. I started with one colony last year, increased to four, which have wintered well.

Now I propose to produce bulk comb honey in shallow 5⅜-inch frames, as I think bees will store more in them than in the small sections, and I can sell all I can produce of this bulk honey, all grades, right at home at 15 cts. per lb., and that is all I can get for the sections. Won't the bees store more honey in shallow extracting-frames than in sections?

Would you use full sheets of thin super foundation in the shallow frames, or starters? Do you really think it pays, financially, to use foundation in these shallow frames?

In Dr. Miller's answer to question 2 of C. A. C., Lincoln, Del., page 204 for March, I wish to know why he couldn't modify the answer somewhat and use a Hodgson ventilated escape-board with double escape, instead of bottom-board under the top story, and let the bees go down below thru the escape, at will, after they emerge from the cells. I have just finished reading his book, "Fifty Years Among the Bees," and I like it well—think I have gotten a great deal of information that just suits my locality.

Shawsville, Va. W. W. Likens.

Dr. Miller replies:

It is quite generally agreed that more honey can be obtained in the larger combs than where the room is broken up into little compartments, as with sections. If the price is the same on each kind of honey, you are very wise to let sections alone.

We know that in most cases publishers of bee journals are more or less interested in the sale of comb foundation, and it is not unnatural that they should lean toward the belief that it is a good thing to use a good deal of it. One can hardly blame them. On the other hand, can one blame the beginner for using in his sections 1-inch starters instead of filling them with foundation, thus saving three-fourths of his outlay?

Now, I am not interested in the use or sale of foundation beyond the interest in it for my own use. I wish I could reach the ear of every beginner who uses foundation. At any rate I ask the earnest attention of all who read this. I have been producing comb honey for a great many years. I have paid out hundreds of dollars of good money for foundation. If I had used inch starters I could have saved three-fourths of that money; for during all these years I have filled the sections with foundation, using top and bottom starters. But for every dollar saved in that way I should have lost two. That's putting it very conservatively.

Let me tell you a little about it. Suppose we have a strong colony in a heavy flow with supers of sections on it. Let us put into it side by side two sections, one filled with foundation, the other having a narrow starter. The bees will at once begin work on each, and it will not be many hours before we find shallow cells drawn out, with a little beginning of honey in many of them. In the one section work will be begun in the whole of the section, but in only a fourth of it in the other; and not until comb is built to fill the vacant space can work be done in the whole of the section. What between the extra honey it takes to build that comb and the delay caused in working in the whole of the section, it is not hard to see that there is lost in the crop a good deal more than would pay for foundation to fill the section full.

There is another item of less importance, but still worth considering. With sections filled with foundation, the queen so seldom goes up to lay in supers that it is not worth while to use excluders. If narrow starters are used, queen-excluders are absolutely necessary, or the bees will build much drone comb in the sections, making the comb not quite so nice in appearance, and, what is still worse, the queen will go up, and a lot of drone brood will be in the sections. To be sure you might avoid this by having an abundant supply of drone comb in the brood-chamber, but that would be only making a bad matter worse.

Unless you are so rich that you can afford the loss, don't fail to fill your sections with foundation. Same thing with shallow frames.

It may be that it would work as well or better to allow the bees to go down thru an escape-board, but in that case it is just possible that the last of the brood might not be so well cared for. But then I don't know. C. C. Miller.

HEADS OF GRAIN FROM DIFFERENT FIELDS

What the Beginner Needs to Watch for the Most

Dr. C. C. Miller:—This spring I bought eight colonies of bees in good condition at a bargain for $25, including all equipment of extra hives, etc., for comb honey. Because of lack of experience I feel that I have quite a job on my hands to handle them properly. Will you be kind enough to outline the things that I shall have to watch the most?

Also, would it be worth while to go to the expense of changing my equipment for the production of extracted honey next year, with only eight colonies, plus this year's increase? I have ten-frame Langstroth hives.

Washington, D. C. Harold L. Kelly.

It is a very difficult thing to say what you will have to watch most. I know it's a common thing for a beginner to feel that some one of experience can give him advice that is exactly suited to his particular case—such advice as will obviate the danger of making a whole lot of mistakes. Suppose I should undertake to do that for a number of beginners. I don't know the circumstances of each. So far as I know, one is the same as the other. So I write to one of them that he must be on the watch against having an excess of drone comb in his hives. And if it's advisable to write it to one, it's advisable to write it to all. And then it's possible that each one has frames filled with worker comb and doesn't need any watching on that point. But I don't know that, so the only safe thing is to advise each.

Then I think of another thing that needs watching, and each one must be told about it. Then one thing after another comes up as possibly needing watching; and when I have covered about 273 different points I find I have written enough to make a book. That's exactly what every beginner needs, and exactly that sort of book you already have if you have Root's A B C and X Y Z of Bee Culture.

My word, then, to the beginner is to have a good bee-book—more than one, if he likes. Some subscribe for a bee journal, thinking that is enough. A bad mistake. If you cannot have the book and the journal, by all means get the book and let the journal wait. You may pick out the things in the book that you think you most need; but if the right sort of stuff is in you for the making of a beekeeper you'll be likely to read the whole of the book, and find it as interesting as a novel. Then you will read the book again and again, until you are familiar with all it teaches.

After you have done your best, not only reading the book, but studying it, there will still be some points not clear to you, or there will come up in your practice something that particularly troubles you, and there's where the bee journal comes in. Write exactly what your trouble is, giving full particulars, and then you may expect an answer exactly suited to your case, or at least the attempt will be made to meet your difficulty.

Now as to changing your equipment for an extracting equipment. The question seems to be whether it is worth while to change with so small a number as 8 colonies with their prospective increase. If it should be advisable to change with as many as a hundred colonies, then I should consider it might be advisable to change for eight, even if there should be no increase. Certainly, if you think of extracting after the number is greater, by all means make the change at once. C. C. Miller.

* * *

Bees that Succeeded in Escaping from Prison

Phone just rang—"Wells Fargo"—in trouble. From "somewhere" in California to "somewhere" in Montana, "shipment of bees in packages," in transit arrived in Portland with, as described by the phoner, "A million flying, and serious trouble in the express car." Could we help? Could we straighten them out? and would we?

It took but a few minutes to drop these into strong boxes and send them up town to our store, and upon examination found the packages more or less damaged, many of the bees escaping, and whoever gets them will certainly be short some bees and some weight. The trouble seemed to be the wood was too light to hold a nail or tack. These were crated in two bunches of 10, and one of 5—25 in all. Other than the cages being damaged, the bees seemed to be in good shape, none dead, and a fair average Italian.

If the shipper perchance sees this we would suggest in after-shipments to bind each end with pieces of tin, wire, or something so that the wire screens will not fall out and release some of the unhappy captives.

The weather is still backward, cold; bees in poor shape for the coming harvest.

Portland Seed Company.
Portland, Ore. Per Ladd.

* * *

Effective Spraying; a Reply to L. P. Tanton page 335, May issue

The treatment of fruit-trees with arsenical or other poisons should be so timed as to minimize the danger to bees, not only for the sake of the beekeeper whose interests should be safeguarded, but also on account of the fruit-grower himself. The latter is dependent upon bees and other insects to carry the pollen from blossom to blossom, and can ill afford to destroy bees—his agents and benefactors as well as the willing servants of the apiarist. There is a law in New York State prohibiting the spraying of fruit-trees in blossom, and we have consistently advised delaying poison applications for the codling moth until the bloom has fallen, not only on account of the law but because it is for the interests of all to observe this precaution.

The question raised by Mr. Tanton in the May issue, page 335, as to the advisability of spraying later must be answered in the negative. It is true that the codling moth appears after the spray has been applied, and the ''worm'' itself even later. Yet careful experiments show that arsenical sprays applied about three weeks after blooming are only, other conditions being equal, about ½ or 1/3 as effective in eliminating wormy fruit. In other words, while later sprays assist, they can not make up for negligence earlier in the season. The mere fact that early spraying with a poison will greatly reduce the percentage of wormy apples means that the arsenical spray must remain in the calyx cup and there destroy a considerable percentage of the caterpillars as they attempt to enter the fruit. For example, in experiments conducted by the writer in 1911, plots sprayed once, twice, and three times bore only 1.93, 1.5, and .86 per cent respectively of wormy apples, while a plot sprayed only once, and about three weeks after blossoming, the time the second application was made, bore 22.2 per cent wormy apples, while the unsprayed trees had 32.79 per cent wormy fruit. These returns were practically duplicated in another orchard, and in both instances the work was done with the same outfit, by the same men, and under practically identical conditions. The one conclusion to be drawn is that a spraying just after the blossoms drop is by far the most effective for the control of the codling moth.

E. P. Felt,
State Entomologist of New York.

* * *

A Westerner Comes Back with Some Pretty Hot Shot I have read with mingled feelings of anger and disgust the article by A. W. Smith (and surprise that it should have had a place in Gleanings). I refer to the part about western honey.

First, as to marketing early. Do the bottlers of Airline honey buy and dispose of western first, or do they let the price at which they can buy have more influence than locality or quality? I know of one large eastern dealer who had the nerve to offer $1.50 per case (24 sections) for a car of fancy and No. 1 western comb that had no granulation, and showed none when sold in the later part of January.

I have no doubt there are western honey-producers selling an inferior honey, and may be there are some who deserve the reputation that Mr. Smith's grandfather earned. But I know there are still some worthy descendants of that old man's class in the East, as I have seen eastern comb honey offered and sold in nice cartons that was yellow, granulated, and in dirty unscraped sections, and put out by an innocent (?) eastern dealer. A western ''brick'' would be a credit to such as that. Michigan is some ''beet'' state; many of them have moved west; and if they continue in the beet industry for awhile we of the West who have spent our lives here, and who are careful not to ship a case of comb honey east that would not be full value for money received, have no desire to accept responsibility for them.

In conclusion I might refer to that famous house of glass, and ask our eastern brothers not to be too careless with their ''bricks,'' but I refrain. But I should like to suggest to the innocent eastern buyer that, if he will deal with any of the several western associations they can rest assured they will receive as good comb honey as they can get anywhere on earth—or better—and I want to add, in justice to the many honest western producers, that hundreds of cars of western alfalfa comb are sold to innocent eastern consumers as clover honey.

Berthoud, Col. A. C. VanGalder.

* * *

How About these Plans for Comb Honey Instead of Extracted? Dr. C. C. Miller:—On p. 404 to 407 of the May 15th Gleanings for last year is a resume of four prominent beekeepers' methods of swarm prevention, every one of whom, tho, I suppose is committed to extracted honey. Would not their ways, to one of which Mr. Morley Pettit very much agrees, do for comb honey?

At times a colony according to these methods has at least three stories—i. e., from bottom up: Brood-chamber proper, excluder, honey-super, and on the latter a super containing brood, which had been directly over the bottom super, before the honey super was put on.

What would probably be the result if, instead of the super for honey to be extracted, one would put one or two section-supers, especially if at least one of the latter had either baits half and half, or all baits—baits cleaned out by the bees the year before?

Ulster, Pa. C. Reynders.

Dr. Miller replies:

Something depends on just what is in that deep super on top, and also upon the flow. In any case, I understand that drawn combs are in the top super. If the section-supers contain all baits, they are likely to be filled as soon as the drawn combs above them, but no sooner than they would be if no drawn combs were above. If the section-supers contain part baits and part foundation, with

HEADS OF GRAIN FROM DIFFERENT FIELDS

a very heavy flow and a very strong colony, I should expect fairly good work in the sections with foundation. With a rather slow flow I should expect the work upon foundation to lag; and with a poor enough flow to have the drawn combs and baits filled and the foundation left untouched. If brood in black combs should be in the top story I should expect the cappings of the sections to be darkened. To be sure, I have read of sections being produced under brood, and nothing said about the sections being darkened; but in the few cases in which I have tried it the sections were always darkened and badly darkened. Of course the case would be different if the brood were in new combs. I'm not sure how it would be if the combs were old brood-combs, but without any brood in them; but I should be afraid of it.

Marengo, Ill. C. C. Miller.

Careful Spreading of Brood to Build up Nuclei Rapidly

Last year from twelve good colonies, spring count, I took 1767 4 x 5 sections of honey and increased to 25 colonies. I already had nearly all the combs I needed. I raised queens by caging the queen in a colony until cells were ripe, then distributing the cells and liberating the queen.

The following method of spreading brood applies to small colonies. Confine the bees by the use of a division-board to the number of combs they can cover thickly. These combs should contain all the brood and as small an amount of honey as possible. Keep one comb of honey only on the side of the hive opposite from that containing the brood. This provides a honey-flow, so to speak, even on days that are too bad for the bees to fly.

Keep the sealed combs always on the outside; and the combs of eggs and unsealed brood in the middle. The sealed brood nearest the time to hatch should always be kept on the outside.

Within a few days every comb in the nucleus will be solid brood and eggs. When the little colony is strong enough, spread the combs and put the feeder comb, which is now nearly empty, in the middle, putting another comb of honey in its place at the outside. If the colony is not strong enough, put the empty feeder comb next to the division-board, and within a few days it will contain some brood and may then be put in the middle. By the time there are five combs of brood the feeder comb should be in the middle, if the weather is not too cold.

Keep a sheet of black roofing paper on the hive, as the bees will breed a little faster. It is really surprising how soon a two or three frame nucleus will be built up to a full eight-frame colony. The plan means some trouble, but it is worth while if one is short of feed. A two-frame nucleus that I had last year produced 81 finished sections, and a three-frame nucleus 104. To be sure the season was two or three weeks late and the honey-flow extra good.

Vincent, Ohio. W. S. Basim.

European Foul Brood Entirely Wiped Out

Last season R. F. Holtermann wanted advice from some one who had stamped out European foul brood after it had spread among his bees. I have gotten rid of this disease after a virulent and wide-spread infection. I have not seen a cell of disease in my own locality for five years. I know another locality where the same has been done. The treatment in both cases was Alexander's, in conjunction with my own—the removal, at night, of all infected colonies, as soon as discovered. The quarantine yard should be two miles from the nearest bees, and the diseased colonies should be treated as soon as possible after removal.

I find in my inspection work that the disease is much more virulent in some places than in others. In the worst form, a few colonies will show disease again after the Alexander treatment. If strong, these colonies are treated again, precisely as at first; if weak, they are destroyed and the combs melted. A full account of my experiments and final success may be found in back volumes of Gleanings, and in the report of the Illinois State Beekeepers' Association for 1915. C. F. Bender.

Newman, Ill.

Book-keeping versus Beekeeping

Dr. C. C. Miller: — I have been persuaded to take a course in book-keeping, and sell my bee business. I have started the course and don't think I shall like it, as it is too confining. I have 50 colonies of Italian bees and equipment. I have studied the business, and like it, and have made a success of it so far. I hate the idea of giving up a business that I have chosen as a life pursuit, and have fallen in love with, too, and follow something that I am afraid I should never like, and I am writing to you for advice.

Do you think I can make as much from 100 or 150 colonies of bees as I could by keeping books at the average price of bookkeepers? I think I can manage 150 colonies all right in several out-apiaries, as there isn't enough pasture to support that number in one yard. F. W. Gravely.

Richmond, Va.

It is a very difficult thing to advise. It is hardly possible to compare the income of the average book-keeper with that of the average beekeeper, for the average bookkeeper has his income entirely from his bookkeeping, while the average beekeeper has only part of his income from his bees, and that, generally, the smallest part. If all who keep bees were to be shut off from all other sources of income except their bees, I'm afraid the average income of the bookkeeper would exceed that of the beekeeper. Then, too, there is the possibility, if not the probability, that you would be more than an average book-keeper, and have a good deal more than the average income. So if you measure the case in cold figures, it is perhaps safer to prefer the books to the bees. And that's the way a good many would measure it, the only question being, "Which has the most money in it for me?"

But your letter indicates that you would view it from a little different standpoint. You have practically said: "The confinement of the counting-room is a life of drudgery, the only enjoyment I would have would be outside working hours, while working at the bees is itself a delight, allowing me to enjoy all the waking hours of the twenty-four." To that might be added that the sleeping hours of a man who has been working in the open air at something with which he is thoroly in love are likely to be more restful than those of a man who has been spending the working hours of the day puzzling over a set of account-books.

So, setting aside the matter of income, there is no question as to which life you prefer; and the problem is reduced to the one question, "Can I make a living at keeping bees?" I can't tell. Yet if others can, why not you?

For myself, I think I should leave bookkeeping to those whose tastes run that way, and take my chances with the bees, even if I couldn't wear quite so good clothes.

C. C. Miller.

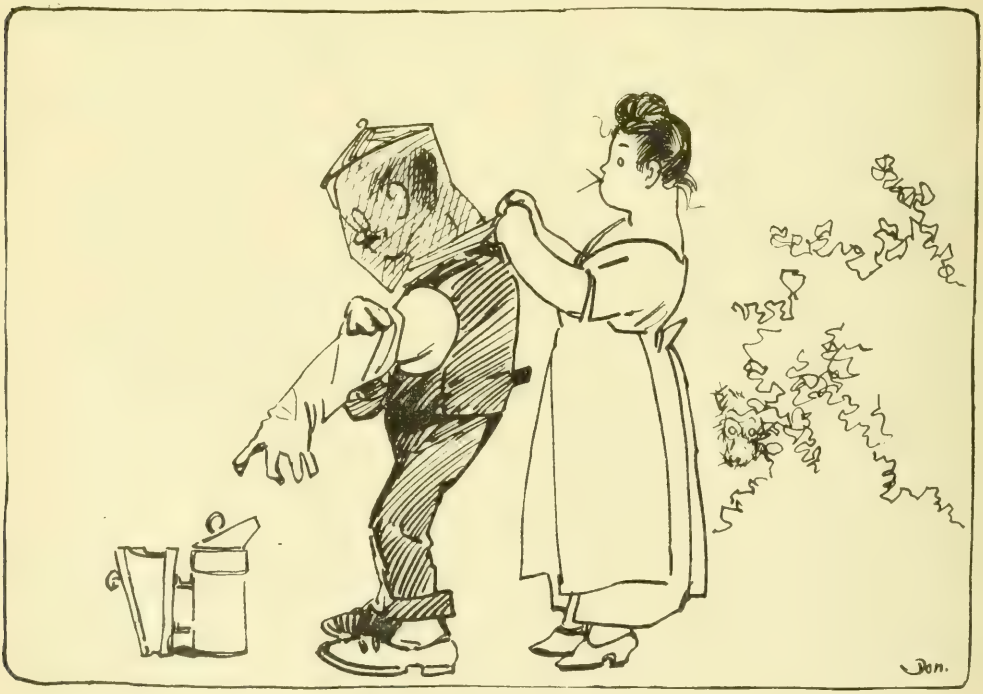
* * *

Soaped Fingers Easily Cleaned

Mrs. Allen, page 291, April, speaks of the awkardness of gloves in the beeyard. I would suggest that she use "soap" gloves, perferably made with carbolic soap. The hands should be soaped with a wet cake, rubbing it in until it dries. It may feel a little unpleasant at first, but one soon forgets it. One's fingers are not all thumbs, and the "propolis and stuff" roll off quite easily when washing if a good job of soaping has been done; and I am sure one gets very few stings thru the carbolic gloves.

Chas. Bowden.

Brantford, Ont.



THE BACKLOT BUZZER.

BY J. H. DONAHEY.

"Leave it to the bees," says ma, "when it comes to doing their bit for Uncle Sam. They ain't playing croquet, lawn tennis, and billiards. No, sir, ee. They're bringin' in the crops."

OUR HOMES

A. I. ROOT

Ye shall hear of wars and rumors of wars: see that ye be not troubled; for all these things must come to pass, but the end is not yet. . . He that shall endure unto the end, the same shall be saved. And this gospel of the kingdom shall be preached in all the world for a witness unto all nations; and then shall the end come.—MATT. 24:6, 13, 14.

MY good friends, the passages I have quoted above are being read and considered just now more than ever, perhaps, since the world began. Mrs. Root often asks the question why it is that God permits such foolish destruction of life and property to go on and on year after year; and I presume she is not by any means alone in wondering why a just and righteous God *permits* this thing to go on. Now, I cannot for a moment think, with my feeble understanding, and perhaps in some measure my feeble faith, that I can fully explain this thing; but I can point out to you, as I pointed out to Mrs. Root, the *good* that is coming as a consequence or as a result of the war.

First and foremost, the liquor business has been given a "jolt," since the war started, unlike anything else since the world began. One of the first things that transpired after picking men to go to war was to consider the matter of physical health; and it did not take very long to decide that alcohol in any form (beer, wine, brandy, or whisky) was not a help to either brain or muscle; and poor heathen Russia, as some of us looked at Russia, was the first to adopt prohibition on a larger scale than the world had ever heard of before. Our own nation, the United States of America, has been blind and stupid ever since our own civil war, in consenting to receive *revenue* from the liquor-traffic. It was not very long ago that the great city of Cleveland was insisting that they could not provide the money to keep up the public schools without the revenue from saloons, in spite of everything our churches, our college professors, and the teachers in our common schools could say; and not only the farm papers, but the religious papers, and papers and periodicals of every sort, are urging the conservation and production of food. Millions of dollars' worth of food have been dumped into the slop-pail every year, so we are told; and not only farmers but everybody who has a back yard is enjoined to grow something that will help keep us from starving, and especially keep in good health the soldiers we send out.

A while ago the brewers, in pleading for the continuance of their business, told how many bushels of grain they bought of the farmers, and said that the farmers would not have a market for their grain if their business was closed up. Well, of course they greatly exaggerated the statement, as they usually do. I cannot recall the figures, but it is something like this: They claim that they bought of the farmers, and paid cash, to the extent of something like *sixty millions of bushels of grain.* Somebody said later, *twenty million* bushels would be nearer the truth. Well, just now we are quite willing and glad to take their own figures. If they have been using sixty millions of bushels of grain that was not only wasted, but a hundred times worse than wasted, why not stop the whole thing and let this enormous amount of grain be used for food and thus help the shortage on food.

In our last issue I told you how the brewers were pleading to have our nation pay them for their losses in case prohibition came; but a great number of distilleries in dry states have already adopted other business; and even our physicians (and they have only recently come around) say this shameful business has kept on because it was fathered by the United States of America. As an illustration, see that little item in our last issue about the missionary who could not get at his stock of bibles until they had unloaded 54,000 packages of liquor—liquors probably sent by the United States to a heathen land in the same ship with a little box of bibles and testaments belonging to a missionary.* In the Old Testament we are frequently told that the wrath of God waxed so hot at times when his chosen people would not listen that a terrible punishment followed to wake them up

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* In connection with the above, see the following which I have just clipped from the *Sunday School Times* of May 5: "On January 7, 1917, a member of the Woman's Missionary Society told how a certain tobacco company, with a plant in China, have expended $5,000,000 in the past two years to fasten the cigarette habit on every man, woman, and child in China. The Chinese have freed themselves from the opium habit forced upon them by Great Britain, and now there is this company with its packages distributed gratis. It is said that with every drygoods purchase made a free package of cigarettes is enclosed. Cannot something be done to awaken China to its peril, before the cigarette gets its strangle-hold?"

—not only wars but famines and pestilence; and when the loving Father finally decided that nothing but this terrible war would wake up the United States, is it unreasonable to think that he said, if I may use the expression, "Let the war come"? And, by the way, altho I have not the figures at present, I think it has been stated that more people go down to untimely graves every year by intemperance than have ever been lost so far in one year of war. Just now while I write, the question is being debated as to whether the best "preparedness" the United States can adopt is to get out of the liquor business, or at least have prohibition while the war lasts. See the article in our last issue by our good friend Attorney Smythe, of Bradentown. Well, just recently another tremendous reason has loomed up, for the Department of Agriculture urges vehemently the growing of something that will *benefit* humanity instead of destroying it.

Well, the war is bringing about the things mentioned above; and, what is more, it is urging people to get up early and work late in making the unsightly back yard a place where good and wholesome food can be grown. Even the schoolchildren and all other children, and old men and old women, are getting the craze to study agriculture, and learn how to keep our people from starving—or, better still, how to send food to the starving in war nations. Girls and boys in their teens, and girls and boys that nobody ever thought as being "extra smart," are astonishing their parents and surprising the world by what they have done in growing corn, potatoes, and tomatoes on a little patch of ground—say a sixth or a tenth of an acre. Down in Florida, where one can grow good and wholesome food *every day in the year on every square rod of ground in the state,* the people are getting particularly alive and on the alert. I have told you on another page of what an old man like myself, going on toward 78, may do. Two crops of potatoes in 180 days on the same ground, and good fair yields of extra nice potatoes at that, can be grown. I cannot think of anything except this war that would arouse such enthusiasm for "reducing the high cost of living." The Department of Agriculture has sent out a plea to have as many as possible start beekeeping in order to save every pound of honey that has been going to waste, especially as sugar continues to mount up. The war is stirring up the whole wide world to a newer and greater activity than was ever known before. Not very long ago there was big talk about "the great army of the unemployed." What has become of that army? Another thing, in the city of Cleveland not many weeks ago there was a good deal said in the papers about elderly men and women who were quite capable, but could not find anything to do. Now, these old fellows like myself have discovered that they can not only make garden, but, like the title of a book I sent out over thirty years ago, can learn not only "what to do" but "how to be happy while doing it." By the way, just about a year ago our folks told me that my book was not selling as fast as it used to do, and I gave it an editorial write-up, as you may remember. The book is all about gardening, chickens, etc. Well, since this backyard garden craze has started, every copy of the book, both paper-bound and cloth-bound, has gone off like hot cakes. When the book was sent out we printed ten thousand copies, but bound and put covers on only a part of them; but just now we have put those printed sheets in the bindery, and a new lot of books will soon be out.

Well, dear friends, what I have just dictated above is only preliminary to something of still greater importance. Thru the activity of the Y. M. C. A. and other religious bodies, more bibles and testaments are being sent out and eagerly read and appropriated than at any other time since the world began. Yes, I am told that the soldiers on both sides are reading their testaments and holding prayer-meetings, and then, perhaps only a few minutes afterward, go out into the business of killing each other.

While I dictate these words on the third day of May we are told there is quite a wave of protest from the common soldiers themselves against this business of killing each other when the larger part of them have no idea or comprehension as to the reasons *why* they should do so.

Yesterday it was my pleasure to listen to John R. Mott, the International Secretary of the Y. M. C. A. Now, I shall have to confess that I did not *fully* understand what "international" meant until I heard this great and good man speak. He stands at the head, or at least nearly so, of the Y. M. C. A.'s of the *whole wide world.* May God be praised that the Y. M. C. A. now covers *almost* the whole wide world. Well, here is another wonderful fact that we praise God for. Every nation on the face of the earth, by some blessed and wonderful arrangement, favors the Y. M. C. A.; and their secretary, Mr. Mott, has a passport, if I am correct, into every nation of the world, notwithstanding any war regulations. He has been permitted to visit the prisoners on both sides of every line of battle; and I was almost dumfounded when he announced in his talk that something like *seven millions* of men are held as prisoners of war. These seven million men must be fed; and I think they *are* fed, thank God, after a fashion. Mr. Mott did not tell us very much about the "feed," but he did tell us of the arrangements for fuel and shelter; and he did tell us, further, that this great army has comparatively little to do, and they are herded like swine in great pens. Now, do not take it for granted that I am pitching into any particular nation. If I am correct, the condition of the *prisoners* in all the fighting nations is not perhaps very much different. With not only hundreds of thousands but *millions* it is an exceedingly hard matter to give them *all* comfortable quarters. There were in many cases no hospitals for the sick. He found sick men crawling around on the ground because they were not able to stand on their feet. He found them exposed to cold and rain because the shelter was inadequate; and he came back to America petitioning for five millions of money to erect hospitals and sheltering-places for these millions of prisoners—prisoners belonging to all nations, mind you. The Y. M. C. A. does not recognize any state or nation above another. Their mission is to lend a helping hand to every suffering child of humanity. The millions of dollars were to be divided up. He told us how much Ohio was called on to give; and, if I remember correctly, they wanted Cleveland to give *one hundred thousand dollars.* To start out with, a man who sat near the speaker offered ten thousand dollars. Perhaps I should explain to you that this audience of perhaps two or three hundred were representative men, or patrons of the Y. M. C. A. of Ohio. They came from every part of the state. After the first ten thousand dollars was offered, another large gift followed. Then two men each gave five thousand; and in *just a few minutes forty thousand dollars* was subscribed to make life easier to the prisoners of war. As an example of the way in which the Y. M. C. A. is favored in all lands, in one nation where Mohammedanism is the prevailing religion he was informed that the Y. M. C. A. men under him could go into the prisons and everywhere else, but that they must not talk about Jesus. They might do whatever they liked to help the people and teach them, and minister to their wants and needs, but they were not at liberty even to mention the name of our Lord and Savior Jesus Christ. Mr. Mott said that he consented to the handicap, but replied something like this:

"If our men cannot *talk* the gospel of our Lord Jesus Christ, you certainly would not object to their living it. We want to show your people what the Lord Jesus does for a man, even if he does not mention his name, and we do this and consent to the terms."

Now, friends, that thing strikes home to me. For some months I have been striving day by day to let my life, my words and actions, and all my dealings with my fellowmen show forth that I am an humble follower of the lowly Nazarine who "was despised and rejected of men, a man of sorrows, and acquainted with grief."

There was still another point brought out, in illustrating how the war is going to elevate humanity. In times past, almost any man who volunteered was accepted; but not so at the present day. Great numbers who come forward are rejected. Each man is carefully examined by an efficient surgeon. It does not pay to go to the expense of sending a man to war and then have to go to the further expense of treating him as an invalid. If I am correct, no man is accepted who has any tendency toward tuberculosis. Well, tuberculosis, or "the great white plague," is a bad thing; but there is a worse one still that afflicts men and boys. The speaker said that, altho Canada had lost a great lot of men by sending them to war, they have lost a still larger number of men by a contagious disease that he did not mention; but he made it pretty plain that it was syphilis and kindred things along that line. In adopting prohibition a great blow will be struck at various diseases peculiar to the "tenderloin" district; and it is just beginning to creep out that the greater part of the men and boys afflicted with these terrible maladies contracted the foul disease *when they were drunk.* In fact, I know of at least one man who caught the infection while he was so drunk he hardly knew what he was doing. Right here in Ohio I have been told by a good friend who is an officer in the Y. M. C. A. ranks that prostitutes follow the soldiers by the carload, just exactly as the saloonkeepers do in the vicinity of where the Ohio regiments are quartered. The saloonkeepers, however, received a cool greeting, and perhaps were a little astonished to be told that soldiers in the year 1917 do not drink beer; and I hope, too, that these poor lost women were informed that the soldiers of the present day take no chances, *especially* those soldiers who have *wives* and *children* away back in the "home land." May God speed the flood of righteousness and temperance that seems to be coming, even if it does come largely thru the exciting times of war; and may God hasten the time when the number of people who are " hungering and thirsting after righteousness " in this great wide world shall wake up and bestir themselves to the opportunities that are now offered. If you cannot do any better, go out and make garden, when you lay down this Home paper, so as to " feed the hungry."

Just one more thing that this terrible war is doing for humanity as perhaps nothing else could do. It is getting the nations of the earth better acquainted and more in touch with each other than anything that has ever transpired since the world began —that is, if I am making no mistake. The children of the whole wide world are learning more geography than ever before. Even heathen lands, or what we were wont to call heathen lands, are catching on to the great achievements of science, art, and literature. In the matter of transportation and communication the world is being transformed; and last, but by no means least, the gospel of Christ Jesus is permeating everywhere, notwithstanding what the powers of evil are in like manner doing. This same Y. M. C. A. we have been talking about in this Home paper is getting everywhere, as I have explained; and may God be praised for the good men who are not even professing Christians for the way in which they are coming forward with their hundreds and thousands; and I am not sure but there has been one contribution of a million dollars to help the Y. M. C. A. extend its helping hand to every child of humanity, no matter who nor on what spot they are located.

" WHO IS MY NEIGHBOR?"

In Stray Straws in our April issue Dr. Miller asks for the *outcome* of my trouble with the express company as given in Our Homes for March. Why, bless your heart, doctor, I supposed the outcome was sufficiently evident as I left it. When I began to recognize the fact that express companies are neighbors, like everybody else with whom I have dealt, I asked myself the question, " What would Jesus do were he in the chicken business, under the circumstances?" The answer was so plain that I felt ashamed to think of making out a bill for damages for a couple of chickens, especially when I started them off in that very pretty but flimsy crate made more for a pretty exhibition at fairs than to stand a shipment of over a thousand miles by express. No doubt the express companies have their faults like the rest of humanity. But is it not likely true that a lot of us are *also* faulty in handing them our stuff poorly prepared for a long distance? "Thou shalt love thy neighbor as thyself." Would it not help matters if we could all exercise a little more charity for even the express and railroad companies?

HEALTH NOTES

OLEOMARGARINE AND REAL BUTTER.

My article on page 301 calls forth considerable protest, principally because, as I understand it, the clipping I gave did not make mention of the fact that the tax on oleo was only when it was *colored* so as to imitate butter; and I shall have to confess that, when I prepared the article for print, I did not know that this tax of ten cents a pound was only on the colored article, and that the tax was laid in order to prevent fraud. The only point made was that a very good substitute for butter could be made from the oil from peanuts, cotton seed, etc., or at least it was largely from these sources, and that the butter we had been buying, supposed to be so made, was very good and wholesome. Perhaps I should add right here that after a more extensive use of this margarine, as they call it, both Mrs. Root and myself decided to pay a little more for real butter. If the two kinds are just alike, the white and the yellow, I should certainly take the white at the lower price. In the advice to the women in regard to boycotting butter and using oleo there was no mention of there being two kinds of oleo —the colored and uncolored. To sum it up, I do not see why there can be any reason in the world against using oleo at a lower price providing it is of a different color and is never sold to deceive people and make them think it is pure butter. And I do not just now see why anybody should complain of a ten-cent tax or even a higher one while an attempt is made to palm it off on an unsuspecting and hungry public for real butter. I believe we have had some recent reports from the Government, to the effect that cows' butter has more nutritive value than oleo; and why not use peanut butter, which is good and wholesome, and I suppose it can be bought almost anywhere for about a third the price of real butter?

Since dictating the above I find the following advt. in the Cleveland *Plain Dealer*:

> Eat nut margarine; contains no animal fats; sells for about half the price of butter. The Brundage Co., 604 Broadway, Distributors.

From the above it would appear that there is a "margarine" made of nuts; and there is also another sort, made of animal oils. Now, whatever is made from the oil of nuts must be nutritious and wholesome; but I think it should be sold under its proper name, and recognized as an honest article of food. So far as coloring it to make it represent butter, or to look like butter, this is, of course, a fraud, and should be punished by a heavy penalty. Let me repeat what the *Sunday School Times* has said: "Deception is always wrong," and especially is it wrong to use any kind of deception or anything misleading in any way in articles of food for human beings.

Later.—Since the above was written we have found that our grocery here in Medina sells "nut margarine," and we like it very well. It looks so much like our brick candied honey that neither Mrs. Root nor I can tell one from the other except by tasting. On the outside of the package we read: "Nut margarine, coco-nut brand oleomargarine. We brand this product oleomargarine to comply with the law; but it is absolutely free from animal fats." So far as I can judge just now it seems to me to be very good and wholesome as an article of food. The retail price is 30 cts. per lb., while butter is about 45.

HIGH - PRESSURE GARDENING

CHILDREN'S GARDENS; ALSO SOMETHING ABOUT GARDENS PLANNED AND WORKED OUT BY OLDER PEOPLE.

Of course our readers know already that I am always interested in gardening—especially nice gardening; and while the matter was up about gardening in the back yard, etc., last summer I was called to be one of the judges in the city of Cleveland in a sort of garden festival. The invitation came from the *Plain Dealer*, and while there Mr. J. W. Love, one of the *Plain*

A backyard garden belonging to J. H. Hellwig, Cleveland, Ohio. Courtesy *Cleveland Plain Dealer*.

Dealer staff, took me around to see the fine gardens in the city. I was so much impressed with one of them that I asked for a picture, and take pleasure in presenting it herewith to our readers, as it illustrates the possibilities of a garden in the back yard. Perhaps few of our readers will be able to produce so enchantingly beautiful a garden, but it may serve as an incentive to go and do likewise. I give below a letter of explanation from my good friend Love.

> *Dear Mr. Root:*—The picture I sent you of the garden I believe was that of Mrs. J. H. Hellwig, whose rose-garden we saw during the morning of the day we looked at gardens and judged the festival. The reason you failed to recognize the place is probably because the photo was snapped from the top of the back porch.
>
> Mrs. Hellwig's garden was really kept by her husband, an Austrian of the newer emigration. He impressed me as having had professional training.
>
> Very sincerely yours,
>
> Cleveland, O., Oct. 12. JOHN W. LOVE.

TWO CROPS OF IRISH POTATOES ON THE SAME GROUND, IN ONE WINTER.

On page 391 of our last issue I mentioned the fact that we commenced selling the new crop of potatoes on March 27. From that time on to the 24th of April, the day we left for our northern home, I carried up to our groceries in Bradentown from one to two bushels each day in half-peck baskets. For some time they brought a dollar a peck; but about the middle of April other potato-growers who grew them in the ordinary way, without the use of hotbeds or cold-frames, as I have described, began to bring in potatoes also, and the price went down to 75 cents a peck, or 40 cents for a half-peck basket. Well, when they got down to 70 cents a peck I think that for one day I got only 60 cents a peck. This was because I advised putting the price down because I wanted to get all of my potatoes disposed of before going back north. Now comes in a point right here that we want to stop and consider a little. When my good friend Burnett said they were so well filled up with potatoes that I had better not bring any more for a while, I told him I must get my potatoes, that were ready to dig, out of the way before I started home on the 24th. I advised that, if they did not go off readily at 70 cents a peck, he might make the price 60. Then he said something like this:

"Mr. Root, your idea of making potatoes cheaper for folks who have not much money is all right and good; but there are also many people who have not very much money who are growing potatoes. They paid a high price for their seed, and have worked hard, and your cutting prices because you are going away may prove a hardship to them. About how many potatoes will you have if you want to sell them by Saturday night?"

I replied that perhaps there were ten or twelve bushels. Then he arranged as to how many bushels I should bring him each day. But when Saturday night came there was a great long row of little half-peck baskets in the store, and not much call for them; but as we did not leave until Tuesday I came up early Monday morning, and, considerably to my surprise, there was not a potato in the store.

Permit me to suggest right here that there are a good many well-to-do people in and about Bradentown—people who will order potatoes perhaps without even inquiring what the price is. Now, these people did not mind a dollar a peck, while a dollar a peck was quite a boon to the small farmers with their land unpaid for, and who were working perhaps twelve or fourteen hours a day to make both ends meet.

Since I have been writing these papers on high-pressure gardening I have several times been rebuked for asking and accepting such high prices for garden-stuff. Let me mention right here that our potatoes were all planted by hand and with hand tools. They are all dug by hand. In fact, that was the quickest and easiest way to dig them. There was not a potato in our whole crop that was scarred or marred by the cut of a hoe or fork. In the Bermudas, that I visited in 1898, in growing the celebrated potatoes they make the ground so mellow that a workman can in many places plunge his naked hand down into the soil clear up to the elbow. Well, it is a good deal so in our Bradentown garden. This being the case, my friend Wesley reaches down into the mellow soil and pulls out the potatoes with his bare arm quicker and cheaper than he could get them in any other way. Then they are well washed and put in bright new half-peck baskets. When I am taking them out of my little auto and carrying them into the grocery, the women going along the walk in front of the store often stop and exclaim, "What beautiful potatoes!" Then they follow me right in and order them tied up and sent to their home almost as quick as they can be unloaded. My potatoes have earned a reputation down in Florida, while those brought in by the farmers, without being sorted or washed, have but little chance of sale until mine are sold and out of the way. I mention this to show you the importance of putting up garden-stuff so that it will *look* attractive. Our potatoes were nearly all Red Bliss Triumph.

Let me now put in a word in regard to "demand and supply" of honey. My good neighbor, Mr. Abbott, who has over 1000 chickens, and more than half of them are laying hens, delivers his eggs to families; and as he is also something of a beekeeper he carries honey along. Well, he has been selling a 3-lb. jar of honey for 25 cents—that is, for the honey alone, for he gets the jar back on the next trip. Another beekeeper living across the river gets 10 cts. per lb., or 30 cts. for the contents of the fruit-jars. Another friend, Mr. Reddout, from York State, brought a lot of honey from his northern home. This honey was a very fine article of almost pure white-clover honey. He sold only 2 lbs. for a quarter. I remonstrated a little with Mr. Abbott for selling it so low. He replied that the people had got used to having 3 lbs. for a quarter, and they would not pay any more. The other neighbor, who had been getting 10 cents, said he could, by taking a little more time, get 12½; but he had to stop and explain and argue the matter; whereas at an even ten cents the honey went right off, and he could get home quicker and get to work. Perhaps I should explain that Mr. Abbott's and Mr. Reese's honey was produced in Florida, and probably gathered mostly from scrub palmetto. Well, I have something else to add.

One day when I was carrying some potatoes into one of our groceries the grocer held up a glass jar of the "Airline" honey, put up by the A. I. Root Co., Medina, Ohio. This honey was 25 cts. for *one* pound; but it was put up in very attractive style, and a little book about honey for cooking went with it. The honey was purchased from us by a wholesale grocery company in Tampa, and they sent our Bradentown grocer a sample case to try. Now, in the case of both the potatoes and honey in the above incident, the way in which they were put up and presented to the public had much to do with the price received. The potatoes we offered were almost all, if not every one, perfect. There were no cut or worm-eaten ones; but when we bought some old potatoes shipped down from the North, Mrs. Root says she has been sometimes obliged to cut off and throw away almost half of them. There would be cuts of the hoe or fork—holes cut in them by wire-worms or grubs, or scab, or something of that sort. But in putting up my bright clean Red Triumphs I sorted out every potato having a bad spot in it; and Mrs. Root cut out the spots and boiled them up for the chickens. I might mention here that all potatoes that were deemed too small for even seconds were also given to the chickens. In fact, Wesley, when digging by hand, saves every little potato, even tho it be not much larger than a grain of corn. Perhaps I should mention here that after Wesley digs a hill of potatoes he gathers up the tops and buries them out of sight right in the place where he took the potatoes out. This leaves the ground clean of trash, and oftentimes we plant another crop of potatoes or corn in the valley between the rows the very day and sometimes the *very hour* the potatoes are taken out; and as this spot between the rows had a dressing of fertilizer when the potatoes were half grown, the new crop comes on with "a good send-off."

The sample of potatoes that sold for a dollar a peck during April, 1917.

Perhaps it may be well to tell you that the potatoes I carried up to the two groceries in Bradentown during the month of April amounted to something like a hundred dollars, besides what I got from the first crop before the frost killed them. With the brush shown in the picture above, the new potatoes are very quickly made ready to be dumped into boiling water.

SOMETHING ABOUT CHICKENS.

I told you in our last issue about how those little potatoes satisfied the growing chicks and started the adult hens to laying. By the way, that brood of 80 chicks became so fond of those little potatoes that they would chase each other all over the yard for them. In fact, they acted very much with the potatoes as they would with angle-worms or fresh meat ground in a bone mill. And this reminds me that I have something to tell you about the 80 chickens I mentioned in our last issue. Up to the age of eight weeks I have not lost a chicken out of the 48 that came from the incubator, and the 32 that came from three sitting hens. When they were just about eight weeks old I found one chick one morning on the ground under the roost dead. When I left Florida the 79 were 12 weeks old, and not a chick had been lost. I mention this because there have been reports going around, to the effect that one cannot raise chickens in Florida; or that if you ship chickens from Ohio down to Florida they would die because they were not used to the climate. Well, the fact is I have been shipping chickens more or less, and ducks too, from Ohio to Florida, and *vice versa*, and have never had a bit of trouble. The chickens are happy and well in either place if you love them and give them care; and my experience is that Florida, *certainly* in the winter time, is a better place to grow chickens and get eggs than here in Ohio.

TEMPERANCE

KEEPING OUR SOLDIERS AWAY FROM DRINK, AND DRINK AWAY FROM OUR SOLDIERS.

Below I make three clippings from the second page of the *Ohio Messenger,* from a letter by my long-time friend Mrs. Florence D. Richard. Here is the first clipping:

> Our grain must not be used to destroy but to build up; and our soldiers must be kept from Rum's destructive influence.

Here is No. 2:

> "A drop of ink makes millions think."

And here is the last:

> Send a message worded something like this to—
> Woodrow Wilson,
> President of the United States:
>
> For God's sake, for humanity's sake, for the nation's welfare, I earnestly and urgently appeal to you to use your influence to prohibit, during the war at least, the manufacture and sale of intoxicating liquors thruout this nation, which traffic causes waste of more than two billion dollars yearly, and is destroying soul, mind, and body of drinker.
>
> If the capital dry, why not the nation?

GOOD NEWS FROM THE GREAT CITY OF CHICAGO

We clip the following from the Cleveland *Plain Dealer* of May 9:

> CHICAGO SALOONS CLOSE; TWO HUNDRED LICENSES LAPSE WITH PROHIBITION PROSPECT.
>
> Two hundred Chicago saloonkeepers are voluntarily preparing to allow their license to lapse and withdraw from the business because of the prospects of a dry nation during the war, according to a report today to the city council finance committee from the controller's office. These licenses, once allowed to lapse, may not be renewed.
>
> The annual loss of revenue to the city will be $200,000.

I do not know who took the responsibility of adding the concluding paragraph, nor who took the responsibility of suggesting that it would be no loss at all to the great city to dispense with its 200 saloons. May God help him to open his blind eyes to what is going on in the great cities of the West in spite of the little loss of the saloon revenue.

SHALL WHISKY OR BEER HELP TO PRESERVE THE INTEGRITY OF OUR NATION?

We clip the following from the *Sunday-School Times* for May 5:

> If our national life is at stake, our soldiers and sailors are the prop upon which such a life rests, and every drunken or drinking member of our armed forces weakens to that extent our national prop. The statement seems to me to be axiomatic. If so, then it is unthinkable that our great country, while in a life-and-death struggle, should permit one drop of whisky to go into the hands or mouths of its fighting forces. We should, therefore, have by all means a law prohibiting, under severe penalties, selling or giving intoxicants to any soldier or sailor of the United States.
>
> But a sober army cannot long endure if it is dependent upon a drinking or drunken population.

BOOZE AND PROSTITUTES.

The *Methodist Temperance Sheet* for May 14 contains the following:

> By advice of the General Medical Board, the Government is planning to estabish a restricted zone about all military commands in order to keep prostitutes and alcoholic beverages from soldiers.

Our readers have noticed, perhaps, the reference made to the above in our Homes for this issue. I was not only surprised but pleased to see that the Medical Board has put the two together as twin evils following the army. May God grant that the above restriction may be carried out to the very letter.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be reponsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

Amber honey in new 60-lb. cans.
Van Wyngarden Bros., Hebron, Indiana.

FOR SALE.—To the highest bidder, a limited quantity of Michigan's best white extracted honey, in 60-pound tins.
A. G. Woodman Co., Grand Rapids, Mich.

HONEY AND WAX WANTED

WANTED.—Section honey.
J. E. Harris, Morristown, Tenn.

WANTED.—Comb and extracted honey at jobbing prices. Nat. Honey-Prod. Asso., Kansas City, Mo.

WANTED.—White extracted honey. State price and quantity. D. H. Welch, Racine, Wis.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED TO BUY a quantity of dark and amber honey for baking purposes.
A. G. Woodman Co., Grand Rapids, Mich.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—Extracted light and amber honey of good body and flavor from any state in the Union. Send sample with lowest cash price.
M. E. Eggers, Eau Claire, Wis.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how mucch you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

HONEY LABELS that will tempt the buyer to purchase your honey. Neat, attractive labels at right prices. Samples Free.
Liberty Pub. Co., Sta. D, Box 4-E, Cleveland, Ohio.

HONEY LABELS. — Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Ct.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—150 hives, 10-frame, finely equipped. James McKee, Riverside, Cal.

THE PERFECT Bee-Frame Lifter. For descriptive circular address
Ferd C. Ross, Box 194, Onawa, Iowa.

Root's supplies at Root's prices. Special offer on 3-frame nuclei for the season.
L. D. Martine, 206 E. Jefferson, Louisville, Ky.

We carry a complete line of bee-supplies. Ask for our bee-supply catalog. Let us quote you on your requirements. Deroy Taylor Co., Newark, N.Y.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg., Co., Paris, Tex.

FOR SALE.—Four-frame Root automatic reversible extractor in good condition, $22.
Elmer Gressman, Hamburg, N. Y.

FOR SALE.—100 nearly new supers, 4¼ x 4¼ plain and beeway. A bargain.
Ralph Hibbard, Calcium, New York.

Northwestern beekeepers can now get Root's supplies at catalog prices near home and save time and freight; also Italian bees and queens. Geo. F. Webster, Valley View Farm Apiary, Sioux Falls, S. Dak.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—50 standard dovetailed ten-frame hive-bodies, Root make, including frames at 60 cts. each, F. O. B. here; 20 Root make Danzenbaker hive-bodies, including frames at 45 cts. each, F. O. B. here. All painted, good as new, used three years.
Henry A. H. Forshaw, Monsey, N. Y.

WANTS AND EXCHANGES

WANTED.—Second-hand Novice extractor cheap for cash. E. J. Wilcox, Rt. 1, Kane, Pa.

WANTED. — Second-hand honey-extractor, two-frame. Leon D. Thayer, Cummington, Mass.

Wax and old combs wanted for cash or to make up on shares, beekeeper to factory direct.
J. J. Angus, Grand Haven, Mich.

FOR EXCHANGE.—16 D. 10-fr. hives with 1 to 2 supers good as new, for bees by the pound. Root make. H. McElhany, Vinton, Ia.

WANTED.—Shipments of old comb and cappings, for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

GOATS

MILCH GOATS.—"Profit and Pleasure in Goat-Keeping," pronounced by experts the best goat book, regardless of price; profusely illustrated; by mail, 35 cents. Fred C. Lounsbury, Plainfield, N. J.

FOR SALE.—One registered grade goat, fresh in June; good milker. Aug. Miller, Bareville, Pa.

PATENTS

PATENTS SECURED or all fees returned. Patents sold free. Read "Patent Sales Dep." of our 200-page Guide Book, FREE! Send data for actual free search. E. E. Vrooman & Co., 834 F, Wash., D.C.

ATTENTION—PATENTS. You will like my easy plan. Write for free booklet.
C. L. Drew, 3 Victor Bldg., Washington, D. C.

POULTRY

S. C. Brown Leghorns; stock, eggs, baby chicks. Circular. H. M. Moyer, Boyertown, Pa.

REAL ESTATE

PROFITABLE LITTLE FARMS IN VALLEY OF VIRGINIA, 5 and 10 acre tracts $250 and up. Good fruit and farming country. Send for literature now. F. H. LaBaume, Agr. Agt. N. & W. Ry., 246 Arcade Bldg., Roanoke, Va.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free. C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Cortlandt St., New York.

When it's GOLDENS it's PHELPS. Try one and be convinced.

Italian bees and queens. Send for circular. Ira C. Smith, Dundee, Oregon.

FOR SALE.—Full colonies fine Italian bees, low price. L. H. Robey, Worthington, W. Va.

FOR SALE.—Golden Italian queens. Untested queens 60c each. J. F. Michael, Winchester, Ind.

FOR SALE.—Italian queens. See large advertisement elsewhere. H. B. Murray, Liberty, N. C.

Queens for July and later delivery. No more rush orders till July 1st. J. E. Wing, 155 Schiele Ave., San Jose, Calif.

Untested Italian queens for sale—1, $1.00; 3, $2.75; 6, $5.00; 12, $9.00. Satisfaction guaranteed. F. L. Johnson, Mt. Airy, N. C.

FOR SALE.—E. E. Mott's strain of Italian queens 90c each, $9.00 per doz. Send for list. Earl W. Mott, Glenwood, Mich.

"She-suits-me," bright Italian queens, $1 after May 15. Orders booked now. Allen Latham, Norwichtown, Conn.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

Italian Bees and Queens, Root's goods, and Cary hives. Catalog mailed on request. F. Coombs & Sons, Brattleboro, Vt.

Tested leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Vigorous, prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing. A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Italian queens, THE HONEY-GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

Finest Italian queens, June 1 to November, $1.00; 6 for $5.00; my circular gives good methods. Ask for one. J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

Phelps' queens will please you. Try them and you will be convinced.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each. Henry S. Bohon, Rt. 3, box 212, Roanoke, Va.

Select golden and three-banded Italian queens, bred for honey-gatherers; gentle and prolific; 70 cts. each; 6, $3.75; 12, $7.25. Virgins, 30 cts. G. H. Merrill, Pickens, S. C.

FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, $1.00; tested, $2.00. Wallace R. Beaver, Lincoln, Ill.

FOR SALE.—Bright Italian queens at 75 cts. each; $7.50 per doz. Ready April 15. Safe arrival and satisfaction guaranteed. T. J. Talley, Rt. 3, Greenville, Ala.

FOR SALE.—25 colonies of Italian bees, frames wired, combs built on full sheets of foundation; 8-fr. colonies, $6; 10-fr., $7 with queen. Henry Shaffer, 2860 Harrison Ave., Cincinnati, O.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1; 6 for $5. Wm. S. Barnett, Barnetts, Va.

BUSINESS-FIRST QUEENS. — Three-banded Italians—untested, $1.00 each; 6 for $5.00. Send for price list and $10 free offer. No disease. M. F. Perry, Bradentown, Fla.

Queens, Queens, Queens. We are better prepared than ever to supply you. Untested, 75c each; tested, $1.25 each; select tested, $2.00 each. See our big illustrated ad on first leaf of this journal. W. D. Achord, Fitzpatrick, Ala.

FOR SALE.—Italian bees and queens. One-pound, two-pound, and three-pound packages, with queens; also on frames and full colonies. Ask for our price list, free beginner's book, and bee-supply catalog. Deroy Taylor Co., Newark, N. Y.

My bright Italian queens will be ready to ship April 1 at 75 cts. each; virgin queens, 30 cts. each. Send for price list of queens, bees by the pound; safe arrival and satisfaction guaranteed. W. W. Talley, Rt. 4, Greenville, Ala.

Two-frame nuclei 3-band Italian bees, $2.25; 1 lb bees with queen, $1.65. Hoffman brood-frames, wired, and foundation, at catalog prices less carriage, if ordered for parcel post. J. B. Marshall & Son, Rosedale Apiaries, Big Bend, La.

My bright Italian queens will be ready to ship April 1, at 60 cts. each; virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, $1.00; 6, $5.00; tested, $2.00; breeders, $5.00 to $10.00. J. B. Brockwell, Barnetts, Va.

TO INQUIRERS.—I sell no queens directly, but have an arrangement with The Stover Apiaries, Starkville, Miss., which I keep supplied with best breeders, and they can supply you with my stock. C. C. Miller, Marengo, Ill.

QUEENS OF SUPERIOR QUALITY.—Untested, 75c each, $8.00 per doz.; select untested, 90c each, $9.00 per doz.; select tested, $1.50 each, $15.00 per doz.; extra select breeder, $5.00. H. N. Major, South Wales, N. Y.

GOLDENS THAT ARE TRUE TO NAME.—One race only, unt., each, 75 cts.; 6, $4.25; 12, $8.00. For larger lots write for prices. Tested, $1.50; S. T., $2.00; breeders, $5.00 and $10.00. Garden City Apiaries, San Jose, Cal.

Golden and three-banded, also Carniolan queens. Tested, each, $1.00; 6 or more, 85 cts. each. Untested, each, 75 cts.; 6 or more, 65 cts. each. No bees for sale. I. N. Bankston, Eagle Ford, Tex.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

QUEENS.—Improved three-banded Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, $8.00; select, $1.00; dozen, $10.00; tested queens, $1.25 each; dozen, $12.00. Safe arrival and satisfaction guaranteed.
H. C. Clemons, Rt. 3, Williamstown, Ky.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; dozen, $9.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Son, Wilcox St., Binghamton, N. Y.

My choice northern-bred Italian queens are hardy, vigorous, and prolific. May and June, untested, $1.50; select unt., $2.00; tested, $3.00; after July 1, unt., $1.00; select unt., $1.25; tested, $2.00; select tested, $2.50. Free circular.
F. L. Barber, Lowville, N. Y.

Golden Italian queens of the quality you need, bred strictly to produce Golden bees that are real workers. Untested, one, 75 cts.; 6, $4.25; 12, $8.25; 50 or more, 60 cts. each. Prompt delivery and satisfaction guaranteed.
L. J. Pfeiffer, Rt. A, Box 219, Los Gatos, Cal.

Golden Italian queens from a breeder that was a first-premium winner at Illinois State Fair in 1916; untested, 75 cts.; six for $4.25; doz., $8.00; select untested, $1.00; 6 for $5.00; 12 for $9.00; tested, $1.50; 6 for $8.00.
A. O. Heinzel, Rt. 3, Lincoln, Ill.

Golden Italian queens that produce Golden bees; good honey-gatherers; no foul brood; select tested, $1.25; tested, $1.00; untested, 75 cts.; 6, $4.25; 12, $8.00. After July 1, untested, 65 cts.; 6, $3.75; 12, $7.00. No nuclei or bees for sale.
D. T. Gaster, Rt. 2, Randleman, N. C.

ITALIAN QUEENS, northern-bred, three-banded, highest grade; select untested, guaranteed; queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness, and perfect markings. Price, one, $1.00; 12, $9.00; 50, $30.00. Send for circular.
J. H. Haughey, Berrien Springs, Michigan.

ENERGETIC HONEY-GATHERERS. — Best three-band stock. Untested queen, 75 cts. Bees per lb., $1.25. In quantity, price quoted on application. Prompt shipments. Safe arrival and satisfaction guaranteed. Shipments ready May 15. No disease in this community. Gila Valley Apiaries, M. G. Ward, Mgr., Duncan, Arizona.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money returned by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

Good Italian queens. Tested, $1.00; untested, 75 cts. Bees in 1-lb. packages, with untested queen, $2.25; 2-lb. package, $3.25; 1-lb. package, with tested queen, $2.50; 2-lb. package, with tested queen, $3.50. Nuclei, 2 frames, with untested queen, $3.25; 3 frames, $4.00. Nuclei with tested queen, 2 frames, $3.50; 3 frames, $4.25. We can please you.
G. W. Moon, 1904 Park Ave., Little Rock, Ark.

None but the best Queens are sent out by us—three-band Italians that are guaranteed to give satisfaction. Untested queens, 75c; $8.00 per doz.; tested, $1.00 each. No disease. Orders filled promptly. J. W. K. Shaw & Co., Loreauville, La.

QUEENS OF QUALITY.—Our Hand-Moore strain of three-banded Italians are beautiful, and good honey-gatherers. Bred strictly for business. Untested, 75c; half doz., $4.00; select, $1.00.
W. A. Latshaw Co., Clarion, Mich.

Golden Italian Queens, bred strictly for business that produce a strong race of honey-gatherers; untested, each, 75c; 6, $4.25; 12, $8.00; for larger lots write for prices. Tested, each, $1.50. Prompt service and satisfaction guaranteed.
L. J. Dunn, 59 Broadway Ave., San Jose, Cal.

North Carolina bred Italian queens of Dr. C. C. Miller's famous strain of three-banded Italian bees; June 1, untested, 1, 90c; 12, $9.00; tested, 1, $1.25; 12, $12.00; selected tested, 1, $1.75; 12, $15.00. Safe arrival and satisfaction guaranteed.
L. Parker, Rt. 2, Benson, N. C.

Three-banded queens only; ready after May 1. Dr. C. C. Miller queens, $1.00 each; 12 for $10.00; breeders, $10.00 each; my own strain, $1.00 each; 12 for $9.00; breeders, $5.00 to $10.00 each; nuclei and full colonies ready June 1; 2-fr., $2.50; 8-fr., with queen, $8.00; 10-fr., with queen, $10.00. Pounds of bees and queens ready April 1.
Curd Walker, Queen-breeder, Jellico, Tenn.

FOR SALE.—200 colonies of bees, 150 hives full of combs, 100 new hives; all combs built on full sheets of foundation and wired frames. Gasoline-engine, and saws for hive-making; 12 x 14 corrugated-iron honey-house; foundation-mill, extractor and supers, etc. Also 117 acres of unimproved land, all located in one of the best alfalfa-seed-growing sections in northern California. A note with approved surety will take one or both. Reasons for selling. I. C. Bachtel, Lake City, Modoc Co., Cal.

I am again ready to mail queens of my strain of three-band Italians. H. C. Klinger, Sec.-Treas., Pa. State Beekeepers' Assoc. says: "Your queens gave me good results; are prolific; the bees gentle and excellent workers. I am well pleased with them." May 5, 1917. Prices untested, each, $1.00; 12, $9.00. Beekeepers of Pennsylvania, New York, and New England states can save on time and express charges on nuclei and bees by pound from here. Price list free. Yours for more honey.
J. B. Hollopeter, Queenbreeder, Rockton, Pa.

Golden 3-band Italian and Carniolan queens: Virgin: 1, 50c; 6, $2.50; 12, $4.00; 100, $25.00. Untested: 1, 75c; 6, $4.20; 12, $7.80; 100, $60.00. Select untested: 1, 85c; 6, $4.80; 12, $9.00; 100, $70.00. Tested: 1, $1.00; 6, $5.40; 12, $10.20; 100, $80.00. Select tested: 1, $1.25; 12, $13.80; 100, $100. Breeders: $3.00 each. Bees in combless packages: ½ lb., 75c; 1 lb., $1.25; 2 lbs., $2.25. Nuclei: 1-frame, $1.25; 2 frames, $2.25; 3 frames, $3.00. Add price of queens wanted. We guarantee safe arrival and no disease.
C. B. Bankston, Buffalo, Tex.

FOR SALE.—Three-band Italian bees and queens. We quote without queen, as follows:—Three-frame nuclei, $2.25; two-frame nuclei, $1.75; one-frame nuclei, $1.25; three pounds bees, $3.25; two pounds bees, $2.25; one pound bees, $1.50. If queen is wanted with bees add price of queen wanted. Young untested queens, $.75; young tested queens, $1.00. Our bees and queens last year gave general satisfaction, and this year we are in position to give stronger nuclei with a greater per cent brood than we did last year. If it is a bargain you are looking for, send your order this way. We are now shipping bees and queens daily. Bees are all in standard hives, Hoffman frames, wired, and full sheets foundation. We guarantee bees to be free from disease.
The Hyde Bee Co., Floresville, Texas.

HELP WANTED

WANTED.—A beeman for a beeyard of 100 colonies. State wages in first letter.
H. C. Ahlers, West Bend, Wis.

WANTED.—Man to work with bees, season 1917. State age, experience, and wages.
The Rocky Mountain Bee Co., Billings, Montana.

WANTED.—Active man with some experience to help in bee and queen yards. Board furnished. State wages wanted.
W. A. Latshaw Co., Clarion, Mich.

WANTED.—Young man between the age of 20 and 35 years to work in bees this summer. State wages expected with board furnished.
F. C. Alexander, Delanson, N. Y.

WANTED.—Industrious young man, fast worker, as a student helper in our large bee business for 1917 season. Will give results of long experience, and board and small wages. Give age, weight, experience, and wages in first letter.
W. A. Latshaw Co., Clarion, Mich.

WANTED.—Experienced queen-breeder and all-around beeman—one who is a hustler and knows the business. Young unmarried man preferred. We furnish board and lodging. Write us your age, experience, etc., with lowest wages first letter.
The Penn Co., Penn, Miss.

WANTED.—Young man with a little experience, fast willing worker, as student helper with our 1000 colonies. Crop for past two years, 6 carloads. Will give results of our long experience and small wages; every chance to learn. Give age, height, weight, experience, and wages, *all* in first letter, or expect no answer. E. F. Atwater, Meridian, Idaho.

SITUATION WANTED

In July, with large producer prefered, northern-tier states to Minnesota, eastern man; no student, no lackey. $60—and found; Sundays and the Fourth, mine. Acknowledgment.
A. I. Root Co., Medina, O., Box 20706.

CONVENTION NOTICES

The field meeting of the Colorado Honey-producers' Association will be held at Denver, Saturday, June 16. The office of the association will soon be ready to advise interested parties of place of meeting. Everybody interested in bee culture invited to come.
The Colorado Honey-producers' Association.

TRADE NOTES

GLASS JARS FOR HONEY.

Because of the advancing prices of glassware and the increasing difficulty of obtaining various styles at all, we have dropped out of our catalog for 1917 all but the six-ounce tumbler and one-pound round jar which we were able to contract for as needed. We still have in stock at Medina, as well as at our branches, more or less of the styles formerly listed which we shall be pleased to close out at former prices while they last. We give a list here of what we have in stock at Medina, with the price of the same, and will try to give in our next issue a list of stock at our branches. These are bargains at old prices on today's market, and should be taken quickly. They could not be replaced at these prices.

18 cases ½-lb. taper-panel jars, 24 to case, 90c case; 6 for $5.10; 80c per case for lot.

45 cases 1-lb. taper-panel jars, 24 to case, $1.10 case; 6 for $6.50; 95c per case for lot.

30 cases ½-lb. tip-top jars, 24 to case, $1.00 case; 6 for $5.70; 90c per case for lot.

42 cases 1-lb. tip-top jars, 24 to case, $1.10 case; 6 for $6.30; $1.00 per case for lot.

8 crates 1-lb. tip-top jars, 144 to crate, $5.50 per crate; $5.25 per crate for lot.

39 cases 1-lb. Federal or Simplex jars, 24 to case, $1.10 per case; 6 for $6.30; $1.00 per case for lot.

5 cases ½-lb. square jars with cork, 144 to case, $4.00 per crate; $3.75 per crate for lot.

7 cases 1-lb. square jars with cork, 72 to case, $2.50 per crate; $2.40 per crate for lot.

30 cases 1-lb. square jars with cork, 24 to case, $1.10 per case; $1.00 per case for lot.

24 cases ¼-lb. Hershiser jars with aluminum cap, 24 to the case, at 75 cts. per case; 70 cts. per case for lot.

Some of the one-pound square jars may have glass top with rubber-band and spring-top fasteners, same style as the tip-top jar. These are usually worth 75 cts. a gross more than the jars with cork; but we will supply what we have at regular price with cork.

ANOTHER ADVANCE IN PRICE OF COMB FOUNDATION AND BEESWAX.

On May 15 we advanced the price of comb foundation 5 cents a pound—retail, wholesale, and jobbing—on all grades, making a total advance of 10 cents a pound over the rates given in our Jan. 1st price lists. At the same time we mark up the price we pay for average wax delivered here to 38 cts. cash, or 40 in trade, with a premium for extra choice wax of 1 or 2 cents. We are so near the close of the season when wax is used in comb foundation we do not look for any further advance.

On the contrary, the price may recede somewhat after July 1 as the present price is abnormally high. We are glad to see the beekeepers getting a high price for wax so long as they have to pay a correspondingly high price for comb foundation. If you have wax to exchange for foundation, our rates for making up have not changed. These will be sent on application to those interested.

HONEY-BARRELS, SECOND-HAND.

We have accumulated a number of good empty honey-barrels which will serve a good purpose for use again. We offer these as follows:

24 30-gal. bbls. of basswood at 75 cts. each.
9 30-gal. bbls. of cypress at 75 cts. each.
4 30-gal. bbls. of oak at $1.00 each.
4 50-gal. bbls, of soft wood at $1.00 each.
10 50-gal. bbls. of oak at $1.25 each.

While barrels are somewhat cheaper than cans at present prices they are not so convenient to empty, especially after the honey granulates. The demand for tin in packing perishable food products is so great that some may be forced to use barrels in packing their honey.

BUCKEYE DOUBLE-WALLED HIVES.

These hives are having a phenomenal sale this season, as our large stock, prepared in anticipation of reaching thru the season, is about gone already. While we do not advertise to furnish these hives in the 8-frame width we have had occasional calls for this size. In anticipation of these calls we have some stock made up which we offer, to close out, at special price. Of the latest style, with loose bottom, we offer 18 crates of 5 each, one-story, with cover, bottom, and frames, at $12.00 per crate; 5 crates at $11.00 or the lot at $10.00 per crate. Of the older style, with tight bottom, we have 7 crates of one hive each at $2.50 per crate, and 7 crates of five each offered at $11.00 per crate, or the lot of 42 hives for $80.00.

EIGHT AND TEN FRAME DANZ. EXTRACTING SUPERS.

We have to offer 140 eight-frame Danz. supers fitted with shallow Danz. extracting-frames. They are painted, and have been used once for producing chunk honey. The list price of these now is 85 cts. each. We offer them to close out at 35 cts. each. This is a bargain for any one who can use them.

We also have 40 ten-frame supers of same style, new, fitted with fences between the frames to insure straight combs for fancy chunk honey. These sell regularly, nailed and painted, at $1.00 each. We offer this lot, to close out, at 60 cts. each.

COMB-HONEY SHIPPING CASES.

In repacking comb honey in such quantities as we do, we accumulate a good many empty shipping-cases which have been used but once, and will serve a good purpose for use again. While the freight will be somewhat higher, especially to distant points, considerable time is saved in nailing up. We offer the following: 1280 single-tier for 24 4¼ x 1⅞ sections at 10 cts.; 720 double-tier for 24 4¼ x 1⅞ sections at 10 cts.; 390 single-tier for 24 3⅝ x 5 x 1½ sections at 10 cts.; 400 single-tier for 24 4 x 5 x 1⅜ sections at 12 cts. If new corrugated pads are wanted with these cases add 2 cts. each for same.

12-LB. SHIPPING-CASES.

While we no longer list the 12-lb. cases they are very convenient many times for local delivery of comb honey. Many a retail customer might take a full 12-lb. case who would hesitate to take the larger size. We still have an accumulation of two and three row cases for the regular styles of sections, put up 10 in a crate at 85 cts., or 50 in a crate for $4.00. These prices are less, proportionally, than the regular cases, and are made only to close out stock. If we do not have your size we cannot make them up at this rate.

60-POUND CANS FOR HONEY.

We have in stock at Medina for shipment as needed three carloads of 60-pound tin cans. We have five more cars bought, but are not sure at this writing whether we shall get them or not, because of the restrictions placed on can-manufacturers about the middle of May. What we have we offer while they last. Cans only, without boxes, tied 9 in a bundle, at $3.00; weight, 24 lbs.; 50 in a crate, $20.00; weight, 190 lbs.; 2 in a box at $1.25, or 10 boxes, $12.00; 50 boxes or more, at $1.10.

NO. 4 NOVICE EXTRACTOR, OLD STYLE.

We offer for sale an old-style No. 4 Novice extractor which takes short frames up to 13½ x 13 inches. This has the old-style cast gears without slip gear. It is a machine which has never been used, but has been standing idle in an agency because there is a very small demand for machines of this size. We offer it for $7.00, which is less than half the present price of an up-to-date machine of the same size.

ACCIDENTAL OR INTENTIONAL.

We doubt whether there are many publications in the country requiring as much of their advertisers as do the publishers of GLEANINGS IN BEE CULTURE. The information that we require regarding responsibility, etc., is so searching that not a few would-be advertisers have protested vigorously. One advertiser in particular, a queen-breeder, recently intimated that we had a personal grudge against him because of our requirement of guarantees from him before inserting his advertising. In spite of this care, some advertisements get inserted occasionally that should have had still more searching investigation. Every publisher has the same experience.

On two different occasions the advertising of the Valley Farm Co., Newburgh, N. Y., Geo. W. Mosely, manager, has appeared in our columns. We have before us two complaints, both arising from failure on the part of Valley Farm Co. to remit for honey shipped to them. Drafts sent to the bank in Newburgh were returned unpaid. We have written the Valley Farm Co., but have received no reply whatsoever, except in one instance, when Mr. Mosely wrote us that there were two sides to the situation, and that the matter did not concern us anyway. The matter does concern us, however. Of course, we do not know whether the failure to remit is the result of careless business methods and lack of system or what. We are able to get no explanation whatever.

Special Notices by A. I. Root

THE A B C OF POTATO CULTURE.

If there ever was a time when this book should be kept and studied over and over again, it is just now when potatoes are a dollar a peck, and in some places as I write even $1.25 a peck. It tells all about what is possible to do with potatoes, not only here in the United States, but down in Florida and clear over in the Isle of Jersey and in the Bermudas. An appendix has been added, telling what I have been enabled to do down in Florida during the past winter in growing two crops of potatoes on the same ground in one winter. Our good President has sent out different messages urging men, women, and children to go into backyard gardening for growing standard vegetables, and especially potatoes under present conditions. Our little book, of close to 400 pages, has passed thru four editions, has recently been revised up to date, and is furnished with a good cover, making it specially adapted to the boys' and girls' potato clubs. Price, paper-bound, 50 cts.; neatly bound in cloth, 75 cts. If your children take any notion to potato-growing, hadn't you better give them this book?

"WHAT TO DO, AND HOW TO BE HAPPY WHILE DOING IT."

The above book was printed close to thirty years ago, and 10,000 copies were made with only a part of the sheets bound and put into covers. As the books did not seem to go off very lively of late years, I made a very low price on the work last December. This low price helped to run the books off; but when the excitement arose about backyard gardening in consequence of the high price of food, it received another start; and when I got back from Florida I was told the books were all gone, both cloth and paper bound, but that there were several thousand of the sheets not yet bound and put into covers. Now, here comes in the trouble: The book originally sold in cloth covers for 65 cts., or 40 if bound in paper. In order to hurry up the sale and get rid of them before they got any older I offered to club them with GLEANINGS so as to make the cloth-bound 25 cts., and paper for 15 cts. When Mr. Calvert got out our catalog for 1917 he advertised the book at 15 and 25 cts., without any mention of their being clubbed with GLEANINGS; and when the war started, and even our President strongly urged backyard gardening, the book just "hit the spot." But here is the trouble: The books were offered at the ridiculously low price mentioned, postpaid; and the postage alone on the paper-covered book to California would be 12 cts., leaving only 3 cts. for a book of 206 pages, weighing almost a pound, that originally sold for 40 cts. We have just had a lot of the books bound up with new covers, and an appendix added in regard to backyard gardening down in Florida, where I grew two crops of potatoes in one winter, and got over $100 for the potatoes grown in my backyard garden. Under the circumstances we are obliged to increase the price of the book, as follows: Paper-bound, postpaid, 25 cts.; cloth-bound, 35 cts.; and even these prices would not pay for the paper and printing at the *present time.*

"HOW TO BE HAPPY WHEN PEOPLE ABUSE YOU."

Many of our readers, perhaps, are aware that we have sent out little tracts with the above title, by the thousand, during the past year. But during my absence in Florida our printing-office was greatly crowded, and I fear a good many of the readers of GLEANINGS who asked for these tracts were told that they were out of print, etc. Unfortunately the requests for them were not all left on my table, so I could not see to the matter when I returned. We now have plenty of them ahead; and if you will kindly repeat your request I think you can have the tracts by return mail. The Home paper for February calls attention to the matter. I am very sorry that many of our friends have been disappointed because their requests did not have the prompt attention they should have.

GOOD BOOKS FOR A SMALL AMOUNT OF MONEY.

In our issue for December 1 I mentioned a number of books at a bargain. Well, they are mostly cleaned out now; but we have remaining one copy of "Barn Plans and Out-buildings," the former price of which was $1.25. We offer it postpaid now for 50 cents.

Of Peter Henderson's Gardening for Pleasure we have two copies left. The original price was $1.25, but we now offer the remaining copies at 75 cents each.

Of Gardening for Young and Old ($1.25) we have four copies left. Present price 60 cents.

Irrigation for Farm, Garden, and Orchard. This was a dollar book, of which we have four copies left, which we now offer at 50 cents each.

Garden and Farm Topics, also by Peter Henderson, a $1.25 book, we have five copies left. We offer them now for 50 cts. each, postpaid.

Onion Culture, by Greiner, a nice 40-ct. book,

FREE! POSTPAID

My Copyrighted Book "How to Judge Engines" tells how high-grade semi-steel engines are made, advantages over cast iron, how common coal oil in a WITTE reduces power cost 65 per cent. Write today and get my "How-to-Make-Money" folder, and latest WITTE Engine prices. Ed. H. Witte.

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1937 Empire Bldg., Pittsburgh, Pa.

"Selecting and Developing the Jersey Herd" is the title of a practical booklet by Prof Hugh G Van Pelt Tells how to select a sire for your herd. Shows how to secure the five essential points every paying dairy cow must possess. Explains how to so feed and handle the heifer calves as to develop greatest milk production. Whether you are now breeding Jerseys or not you need this booklet—it's free Send to-day. Please mention this paper

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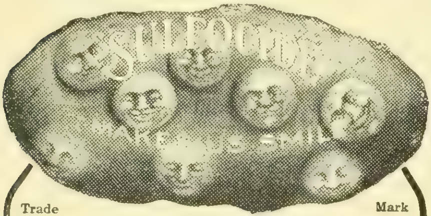
405 West 23d St. New York City



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A Powerful Fungicide for Fruits, Vegetables and Flowers

Peach Leaf Curl, Brown Rot, Apple Scab, Grape Mildew, Potato Blight, Cucumber Wilt, Bean Blight, Rose Mildew, etc.

Most inexpensive. 1 gal. makes 200 gals. spray. $1 to $2 per gal. according to size package.

Booklet free.

B. G. Pratt Co. Dept. 6 50 Church St., N. Y. City

"Best" Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. **Agents wanted. Big Profits. Write for Catalog.** THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

cloth-bound. Of this we have two copies left, which we offer at 25 cents each.

Gardenette, a beautiful book clear up to date, and beautifully illustrated, on "high-pressure gardening." See notice in GLEANINGS for Nov. 15, p. 1093, where I gave the book quite a write-up. Price $1.25; clubbed with GLEANINGS, $1.75 for both.

Asparagus Culture, a 40-cent book, we also offer at 25 cents, postpaid.

Alfalfa, a 40-cent book, we offer now at 25 cents.

Merrybanks and his Neighbor, a story about gardening, etc., by A. I. Root, postpaid, 5 cents.

Winter Care of Horses and Cattle, by T. B. Terry, a 40-cent book, we now offer at 10 cents.

Maple Sugar and the Sugar-bush, by A. J. Cook, a 40-cent book, we now offer at 25 cents.

Carp Culture, a 40-cent book, is now offered at 15 cents.

If there ever was a time when these books on gardening, especially *high-pressure* gardening, were needed, it is *just now*, and I need not stop to *explain* why.

OLEOMARGARINE—MORE IN REGARD TO IT.

We gladly give place to the following kind word:

> *Brother Root:*—You surely made a big mistake when you advised oleomargarine as a substitute for butter. At the Wisconsin Experiment Station they proved that butter is infinitely superior to oleo. Butter is filled with God-given life. Oleomargarine is dead fat. In the experiment, rats fed on butter thrived amazingly; but those fed on the oils from which oleo is made did not grow but nearly starved. In justice to yourself, to humanity, and the producer of butter, you should inform yourself and correct the serious error you fell into. I address you as brother, and in that spirit I write the above. You have been one of my chosen guides for 30 years.
>
> East Berlin, Pa., May 9. L. W. LIGHTY.

I notice in the above that no distinction is made between nut butter and that made of animal oil, etc.; and this has been the case with most of the criticisms. The writers, it seems, do not recognize there are two kinds—the animal and the vegetable oleo; or it may be that they mean to class both as inferior to real butter; and I might say, since Mrs. Root and I have used perhaps two or three pounds of the nut oleo, both in Florida and here in Ohio, we have about decided to use the real butter, even if it does cost about one-half more.

Still later. — The *Rural New-Yorker* quotes from an advertisement of the Barre Milk-producers' Association as follows:

> Animal fat in butter is worth three times the same amount of vegetable fat which you get in oleomargarine.

Just below the above the *Rural* indorses it as follows:

> This is a good advertisement, and it should be kept constantly before the people. Milk is a good food bargain at 15 cents a quart as compared with other standard foods at present prices. As for butter, do not forget that its food value is not the full measure of it. As compared with other fats, butter is alone in containing a principle which is absolutely necessary to children and growing young people. Fats or oils like "oleo" cannot supply the vital principle which comes in pure butter, and in all advertisements of milk and butter this point may well be made plain.

BOOKS AND BULLETINS

"MONEY IN BEES" is the title of a charming book that has come to us from under the Southern Cross, far-away Australasia. It is from the pen of Tarlton-Rayment, an Australasian beeman of no ordinary ability. Space will not permit an extended resumé; but a word from the introduction will prove illustrative. Mr. W. S. Pender says of the book, in the introduction: "Australasian conditions are in many ways peculiar, so that works applicable to other lands are often ineffective here. The author has given us the results of his years of interesting experiences, and has proved in his own apiaries all that he has written, having made apiculture a profitable business." The illustrations are the creations of the author's own hand and brain; nor are they inferior for being "home-made." They prove him as artistic as practical. His originality, too, is shown on many a page and in many a paragraph. He has given a signal proof of his individuality in the treatment accorded the eucalypts, those nectariferous giants of the Australasian forests. The wattles are also fully treated and illustrated. In his entire botanical section he undoubtedly breaks new ground, in that he is the first beeman to attempt anything of the sort for his country. It is the acute and shrewd observations of the man that wake the reader up to the fact that he is reading the work of a real live apiarist and thinker. We wish we had space to illustrate this point. The volume is a real addition to the apicultural literature of the world.

* * *

"BEES AND HOW TO KEEP THEM" is a bulletin (No. 26) by F. W. Sladen, Dominion Apiarist, published at Ottawa, Ont., under the direction of the Minister of Agriculture, Ottawa, Ont. There are 56 pages, 40 excellent illustrations, two of them full-page size, and all wonderfully clear. Especially worthy of note are those of the clovers, goldenrod, and fireweed. The manipulations of most of the work in the beeyard are illustrated from life, and so clear that "he who runs may read" and know. Mr. Sladen, the author, is a scientist as well as a writer, a practical apiarist as well as a close student of nature, and thus eminently qualified to produce a bulletin like this. The brief introduction reads in part: "The purpose of this bulletin is threefold — to point out the advantages of beekeeping; to give, very briefly, reliable advice to the beginner; and to show to those who are keeping bees in the old-fashioned or neglectful way how their profits may be doubled or trebled by the adoption of modern methods." Starting with the saying, "The resources of Canada are inexhaustible," Mr. Sladen handles the topic in such a masterful way that when we lay the booklet aside we feel he has made good his promises in the

Less Waste—More Profit

This very morning, precious butter fat was wasted in your dairy unless you are one of the thousands of enthusiastic users of the New Sharples. Every old-style separator loses cream rapidly whenever the speed slackens and no one can guess the crank speed accurately. Stop this waste and increase your profits by using the

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SUCTION-FEED
CREAM SEPARATOR

It skims clean at any speed—high or low. The capacity increases as you turn faster. But fast or slow, you get cream of *even thickness*—smooth as velvet. No other separator has these important advantages. Write today for free book, *"Velvet" for Dairymen.*
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BEESWAX WANTED

You will save money and freight on your 1917 foundation by shipping us your beeswax and paying only for its manufacture into "SUPERIOR FOUNDATION" (Weed process).

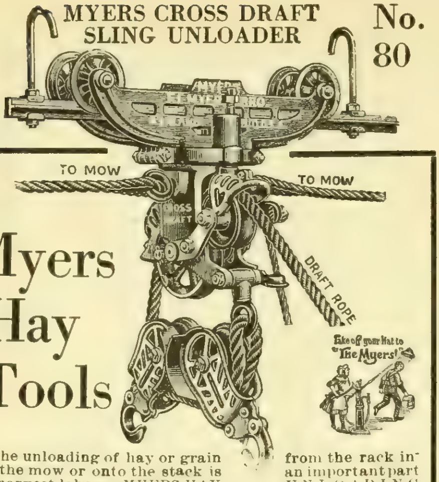
SUPERIOR HONEY CO., Ogden, Utah

DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for $1.

DAISY FLY KILLER

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

LEPAGE'S GLUE HANDY TUBES
SAVES YOU DOLLARS 10¢


TO MOW
TO MOW
DRAFT ROPE
Take off your Hat to "The Myers!"

MYERS CROSS DRAFT SLING UNLOADER No. 80

Myers Hay Tools

The unloading of hay or grain from the rack into the mow or onto the stack is an important part of harvest labors. MYERS HAY UNLOADING TOOLS are therefore of importance to every farmer, for they have extra large capacity, are easy to operate, and unload rapidly all kinds of hay or grain.

Myers Unloaders, Forks, Slings, Pulleys, Tracks, and Fixtures

meet hay making conditions in every community. They are uniformly constructed throughout, insuring freedom from breakage and delay during harvest, and guaranteed in every respect if properly used.

Whether your farm is large or small, you want the very best---dependable, time and labor saving---hay unloading machinery. You may need an entire new outfit or perhaps only a fork, set of slings, a pulley or two, or a few hooks. In either case it should be manufactured by Myers. Ask your neighbor, see your dealer, or write us.

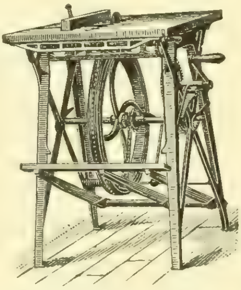
F. E. Myers & Bro. 351 Orange Street
Ashland, Ohio

PATENTED 1916

WRIGHT'S FRAME-WIRING DEVICE

Most rapid in use. Saves cost of machine in one day. Tighter wires; no kinks; no sore hands. Price, $2.50, postpaid in U. S. A.

G. W. Wright Company - Azusa, California



BARNES'
Hand and Foot Power Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices. Address

W. F. & JOHN BARNES CO.
545 Ruby St.
ROCKFORD, ILLINOIS

CASH paid for butterflies, insects. Some $1 to $7 each. Easy work. Even two boys earned good money with mother's help and my pictures, descriptions, price list, and simple instructions on painlessly killing, etc. Send 2c stamp at once for prospectus.
SINCLAIR, Box 244, D 62, Los Angeles, Cal.

Books and Bulletins—Continued

introduction. Among the topics discussed are How to Begin; The Outfit; Races of Bees; Swarm Control; Requeening; Diseases; Bees and Fruit; Associations and Publications, etc. We note an absence of any data on marketing the crop, but it may be that the special nature of this pamphlet precludes that topic. With this slight exception the bulletin seems to cover the entire field of apiculture most concisely and most thoroly. It seems sure that more than the novice could derive benefit from a reading and study of the manual, and we advise all who can to can to secure a copy and make it their own in more ways than mere purchase.

* * *

INTERESTING EXPERIMENTS IN CANADA. Apropos of the review just given we would call special attention to the 37th annual report of the Ontario Agricultural and Experimental Union for 1915, published at Toronto. This report contains two valuable articles for beemen, specially for Canada, but also valuable for beemen all over the country. The article on page 43 and following gives in seven pages of closely printed matter the results of co-operation in experimental work. The Union has printed specially good methods of operation and management, tested and found to be very efficient. These are sent out and are being sent out to beemen all over Canada, and their reports tabulated for further use. They include experiments on prevention of natural swarming in extracted-honey production by holding the colony together; prevention of natural swarming in comb-honey production by artificial shaken swarming; prevention of natural swarming by manipulation of hives instead of combs; spring management to get colonies strong for the honey-flow; fasting method of introducing queens; smoke method of introducing queens; shipping and introducing combless packages of bees; wire-cloth bee-escape board for removing bees from supers; wintering bees in four-hive boxes outdoors; and special experiments of testing foul-brood-resisting colonies. It is interesting to note that, with hardly an exception, the reports from the many apiarists that tried these methods in 1915 show enthusiasm for the methods tried. Many report "better than anything used thus far;" "more honey, less work," etc. It is clear that live men are at work in the government stations in Canada. We cannot refrain from quoting one paragraph, because it is now so apt for the United States. It is on page 48, 49 of the report, as follows: "On account of the war, Canada is piling up an enormous national debt. The only way this can be paid is by developing our national resources. A valuable national resource is the honey which is produced every summer by the many millions of flowers blooming on the farms of Ontario. . . At present many tons are wasted for want of bees." (Could we do better than to follow suit? E. G. B.).

Grow Bigger and Better Vegetables

You can make your Gardening Profitable and Easy with a

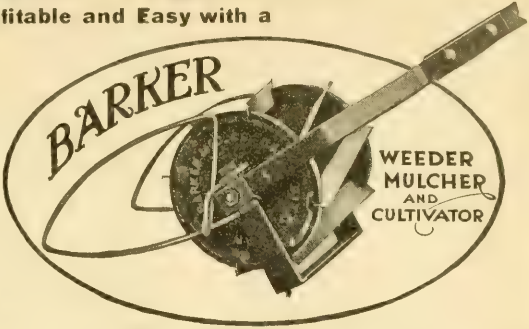
BARKER Weeder, Mulcher, Cultivator. Three garden tools in one.

Kills the weeds and mulches soil IN ONE OPERATION.

Eight reel-blades, working in combination with a stationary knife which passes just below the surface, destroy the weeds and pulverize the crust into a level moisture-retaining mulch.

Has shovel attachment for deeper cultivation; also leaf-guards to protect grown-up plants. "Best Weed Killer Ever Used." Will pay for itself in a single summer. Write for illustrated catalog and special factory-to-user offer.

BARKER MFG. CO., Dept. 10, David City, Neb.

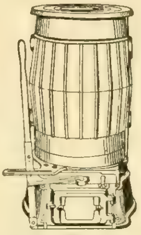


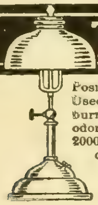
VICTOR and HOME VICTOR

Multiple System Water Heaters for House Heating

Heats bath and kitchen boiler too. ONE STOVE AND ONE FIRE YEAR ROUND. There is nothing like it. Send for booklet.

S. V. Reeves, Mfr.
Haddonfield, N. J.





The "BEST" LIGHT

Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

SOUTHERN BEEKEEPERS

Get the Famous Root Goods Here

Veils, 65c; Smoker, 90c; Gloves, 65c pair; wire-imbedder, 35c; honey-knife, 80c; 1-lb. spool wire, 35c; medium-brood foundation, 1 to 11 lbs., 58c per lb.; 11 to 25 lbs., 56c; 50 or 100 lb. lots, 53c. Ten-fr. wood-zinc excluders, 50c each; Hoffman frames, $3.75 per 100. Honey-extractors for sale. I am paying 28c cash, 29c trade, for wax.

J. F. Archdekin, Bordlonville, Louisiana.

BEEKEEPERS' SUPPLIES

Send for new 1917 price list now ready. We are also in the market at all times for extracted and comb honey in any quantity. Give us a chance to bid on your supplies. We can save you money.

The M. C. Silsbee Co., Haskinville, N. Y.
P. O., Cohocton, N. Y., Rt. 3.

PENNSYLVANIA BEEKEEPERS

Our catalogs now out. Postal will bring you one. Root's goods at Root's prices. Prompt shipment.

E. M. Dunkel, Osceola Mills, Pa.

Increase Your Honey Crop

by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested, each, $1; 6, $5. Tested, each $1.25; 6, $5.50. Breeders, $5.

FRED LEININGER & SON, Delphos, Ohio

Queens See our May Ad. **Queens**

THREE-BANDED ITALIANS THE BEST. They are hustlers, gentle to handle, cap their honey white, are very resistant to European foul brood. Some call them Long-tongue Red-clover Queens. Satisfaction and safe arrival guaranteed.

	1	6	12	50	100
Untested queens, June to November............	$ .80	$4.40	$ 8.00	$30.40	$ 60.00
Tested queens, June to November..............	1.00	5.20	9.60	36.00	70.00
Select tested queens, June and November........	1.60	8.00	14.40	52.00	100.00

Let us know your wants. Circular free.

Nueces Valley Apiaries . . . . . Calallen, Nueces Co., Texas

Queens . Queens . Queens

We are making a specialty of untested queens, and are prepared to send either large or small quantities out promptly, generally by return mail. Every queen guaranteed to be entirely satisfactory. Goldens after June 15th at the same price. We spare neither labor nor money in producing the best queens. Quality counts the most with us.

One queen, 75c; 12, $8.00; 25 to 1000, 60c each. One pound bees, $1.25; 10 or more, $1.00 per pound. Two pounds, $2.25; 10 or more, $2.00 each. One frame nuclei, $1.25; two frame, $2.25; three frame, $3.25. Add price of queen wanted. Full colonies a specialty.

The Stover Apiaries, Starkville, Mississippi

After June 20 address will be Mayhew, Miss.

Queens . . Queens

From a strain of Italians, wintered for thirty years in the foothills of the Adirondack Mountains out of doors. Hardy, gentle, industrious, and fine resisters of disease. $1.00 each, or $9.00 per dozen; also nuclei and full colonies.

Charles Stewart, Box 42, Johnstown, N. Y.

For Sale: Hives

Twenty new standard dovetailed, 10-frame hives; never used; nailed and painted, two coats white; with Hoffman frames and full sheets foundation. Also 50 full-size supers filled with same frames for extracting. One-story hives complete, each, $2.75; two-story hive complete, each, $4.50; extra supers, complete, each $1.75. Cash bargain. Write quick.

W. B. DAVIS CO., AURORA, ILLINOIS

TIN CANS AND PAILS

Up to June 20 we can furnish tin cans at the following prices:

	F. O. B. Hamilton or Keokuk, Ia.	F. O. B. Chicago
2 -lb. Crates of 612, per case	$24.20	$23.00
2 -lb. Cases of 24, per case	1.20	1.15
2½-lb. Crates of 450, per crate	21.40	20.40
2½-lb. Cases of 24, per case	1.30	1.25
5 -lb. Crates of 100, per crate	7.75	7.40
5 -lb. Crates of 200, per crate	15.00	14.75
5 -lb. Cases of 12, per case	1.10	1.05
10 -lb. Crates of 100, per crate	11.50	11.00
10 -lb. Cases of 6, per case	.85	.80
60 -lb. Wire bound cases of 1		.48
60 -lb. Wire bound cases of 2		.80

BUY NOW

As our contract with the tin-can company closes on July 1st, your orders should reach us not later than June 20 so as to give us ample time to place your order with the factory. **After July 1st prices will advance to a considerable extent.**

Dadant & Sons . Hamilton, Illinois

For Sale --- 10,000 lbs. of Bees in Packages --- Spring Delivery

20 YEARS OF SELECT BREEDING GIVES US BEES OF THE HIGHEST QUALITY
BEES FOR HONEY PRODUCTION..............BEES OF UNUSUAL VITALITY

M. C. Berry & Co., Hayneville, Ala.

Gentlemen:—Will want more of your three-pound packages of bees with queens in spring. The two I bought of you last May did all right; one package made 185 sections of honey and gave one swarm and the other made 296 sections and gave two swarms. I am well pleased.

Kimmell, Ind., Jan. 15, 1917. Melvin Wyseng.

Very Resistant of European Foul Brood, and Safe Arrival Guaranteed.

Swarms of Bees Without Queens April First Delivery

1-lb. packages, $1.25 each;	25 to 50, $1.22½ each;	50 to 100 and up, $1.20 each
2-lb. packages, 2.25 each;	25 to 50, 2.22½ each;	50 to 100 and up, 2.20 each
3-lb. packages, 3.25 each;	25 to 50, 3.22½ each;	50 to 100 and up, 3.20 each

Golden and 3-Band Italian Queens April First Delivery

Untested ..... 75 cts. each, $65.00 per 100	Tested .....$1.25 each, $110 per 100
Select Untested 90 cts. each, 75.00 per 100	Select Tested 1.50 each, 125 per 100

Queen's wings clipped free of charge.
Write for descriptive price list Let us book your order now.
Only a small deposit down required.

LARGEST AND MOST SUCCESSFUL SHIPPERS OF BEES IN PACKAGES

M. C. BERRY & COMPANY, Hayneville, Alabama, U. S. A.

Queens of Superior Quality

Select Three-banded Italian or Leather Color

All orders, no matter how large or how small, will be greatly appreciated and acknowledged the same day they are received.

Safe arrival guaranteed.

Queens' wings clipped according to your direction free of charge.

	1	12
Untested	$ .75	$ 8.00
Select untested	.90	9.00
Select tested	1.50	15.00
Extra select breeder..	5.00	

H. N. MAJOR
South Wales, New York

QUEENS
For Sale

Red-clover 3-band Italian queens; Root's, Moore's, Davis', extra-select stock, mated with Geo. B. Hows' famous select drones. I know none better for honey-gathering, wintering, beauty, etc. I guarantee 90 per cent pure mated if queens are returned to me. Queens or money back in a reasonable time. No foul brood, no bee disease; apiaries inspected by Mr. Rea and Prof. Franklin Sherman, Jr. Mr. Rea is our bee inspector of this state.

	Price before July			After July 1st		
	1	6	12	1	6	12
Untested queen .	.75	4.00	8.00	.70	3.25	6.50
Select untested . .	1.00	4.50	8.50	.80	3.75	7.00
Tested	1.25	6.00	10.00	1.25	5.00	9.00
Select tested	1.50	8.00	13.00	1.50	6.00	10.00
Extra select tested	2.00	10.00	15.00	2.00	8.00	13.00
½ lb.bees with qn	2.00	10.00	16.00	1.75	8.00	14.00
1 lb. bees with qn	2.50	12.00	20.00	2.00	10.00	17.00

I can furnish bees in lots of 25, 50, and 100 pounds. I am in position to give prompt service this season. My bees are of a famous foul-brood-resisting strain.

H. B. Murray . . Liberty, N. C.

Queens of Quality

Select, three-banded, leather-color Italians—bred for honey production. . . Untested queens, 75c each; 6, $4.25; 12, $8.00. . . . Descriptive circular free.

J. I. Banks, Dowelltown, Tennessee

Italian Queens and Bees

I am better able to supply the trade with my three-band Italian queens, colonies, and nuclei than ever before. Send for circular and prices.

E. A. Leffingwell, . . Allen, Mich.

TALKING QUEENS

Laws' Queens Speak for Themselves

Please remember Laws' queens have stood the test of continuous advertising in this journal for this the 28th season. Thousands of customers have testified to the merits of Laws' bees and queens, and if there is a displeased customer I do not know it.

Untested will be ready in April; after which see the following table.

	April to June			June to November		
	1	12	100	1	12	100
Untested	$1.00	$ 9.00	$ 75.00	$ .75	$ 8.00	$ 65.00
Tested	1.25	10.00	85.00	1.00	10.00	75.00
Select Tested	2.00	18.00	120.00	1.50	15.00	100.00

Breeding queens: Guaranteed none better, at all times: each $5.00

Combless Bees AFTER MAY 1st.

1 lb. package,	$1.50; 5 to 10 packages each,	$1.25; 10 to 50 packages,	$1.15
2 lb. package,	2.50; 5 to 10 packages each,	2.25; 10 to 50 packages,	2.15
3 lb. package,	3.50; 5 to 10 packages each,	3.25; 10 to 50 packages,	3.15

Price of queens to be added to above packages.

When 10 or more packages are bought, empty carriers to be returned at my expense.

My queens are all reared in full colonies, plenty of young bees and abundance of fresh honey in the hives. No other plan is so conducive to full-developed and long-lived queens.

My facilities are such that I can mail from 5000 to 6000 queens each season. Circular on application.

Purity of stock and safe delivery guaranteed to your express or post office on all bees and queens from my yards.

Address

W. H. Laws, Beeville, Bee Co., Texas

QUEENS

OF QUALITY

Capacity of Yard over 1000 Queens a Month

After 20 years of careful selecting and breeding I now have a strain of bees that cannot be excelled by any. . . . My queens are all bred from IMPORTED STOCK, the very best in the world for honey-gathering and gentleness. They are not given to swarming. What more do you want in bees than the three above qualities?

Prices April 1st to July 1st.

	1	6	12		1	6	12
Untested	$ .75	$4.25	$8.00	Tested	$1.25	$7.00	$13.00
Selected untested.	.90	5.00	9.00	Selected tested..	2.00	11.00	20.00

GUARANTEE.—You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition, to be purely mated, and to give perfect satisfaction. All queens that do not give satisfaction I will replace or return your money. Send for circular.

L. L. Forehand, Ft. Deposit, Alabama

Forehand's Queens . . . Get a good Queen

One that will keep the hive chock full of bees at all times, make the biggest yields of honey, sting less, and look the prettiest, at a medium price.

Over 25 years of select breeding has brought our queens up to a standard surpassed by none, and the superior of many. We have tried the principal races and every method known, and now we have selected the best race and method—the THREE-BAND BEES and the DOOLITTLE METHOD. We USE THE 3-BANDS —Why? Because they get results.

Dr. Miller, Roots, and Dadants use them.

Our queens are sold by many of the largest dealers in the U. S.

Louis H. Scholl (one of the largest beekeepers of the Southwest) says, "Three-band Italians have proven the best all-around-purpose bee after trying out nearly every race—not only in an experimental way while still at A. M. Col., but in our own apiaries as well." (In Beekeeper's Item.)

Untested	One,	$ .75	Six,	$ 4.25	Twelve,	$ 8.00
Selected untested	One,	1.00	Six,	4.75	Twelve,	9.00
Tested	One,	1.50	Six,	8.75	Twelve,	17.00
Selected tested	One,	2.00	Six,	11.00	Twelve,	20.00

Write for circular giving general description. Mail all orders to

W. J. FOREHAND & SONS, Fort Deposit, Alabama

Queens from Dr. C. C. Miller's Best Breeders

We have made arrangements with Dr. C. C. Miller to keep us supplied with some of his best breeders, and are rearing queens from these superior mothers that we guarantee to be as good as can be reared. These queens are not just individuals that have made a good yield; we all have some colonies that made a good showing, but all do not have a strain that holds the world's record as his does. Think of it—a whole yard of 72 colonies averaging 266 sections weighing 244 pounds. You are getting at a low price the results of fifty years of careful breeding of one of the most successful beekeepers in the world. Safe arrival and entire satisfaction guaranteed on all goods sold.

One untested Miller queen, $1.00, $11.00 per dozen. Tested, $2.00. Ex. Select Tested, $3.50. Breeders, $5.00 to $10.00 each.

One pound bees, $1.25; ten or more, $1.00 per pound. Two pounds, $2.25; ten or more, $2.00 each. One frame nuclei, $1.25; two frame, $2.25; three frame, $3.25. Add price of queen wanted. Full colonies a specialty.

The Stover Apiaries

Starkville, Miss.

QUEENS

Quirin's Improved Superior Italian Bees and Queens. They are Northern Bred and Hardy. . 25 Years a Queen-breeder.

PRICES	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested....	1.00	5.00	9.00	.75	4.00	7.00
Tested	1.50	8.00	15.00	1.00	5.00	9.00
Select tested ..	2.00	10.00	18.00	1.50	8.00	15.00
2-comb nuclei	2.50	14.00	25.00	2.25	12.00	22.00
3-comb nuclei .	3.50	20.00	35.00	3.25	18.00	32.00
8-frame colonies ..	6.00	30.00		5.00	25.00	
10-frame colonies .	7.50	38.00		6.50	32.00	
1-2 lb pkg. bees ...	1.50	7.00		1.00	5.00	
1-lb. pkg. bees.....	2.00	10.00		1.50	8.00	

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders, $5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above price on bees by pound, nuclei, and colonies does not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Also nuclei and colonies, if wanted before June 1, add 25 per cent to price in table.

Breeders, select tested, and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now.

Reference—any large supply dealer or any bank having Dunn's reference book.

H. G. Quirin, Bellevue, Ohio

Rhode Island Northern-bred Italian

Queens, $1.00. Circular.
O. E. TULIP, ARLINGTON, RHODE ISLAND

SWARMING CONTROLLED . . . .

If interested, address Charles Thompson,
Marion, Iowa, for information.

QUEENS Select Italians;beesby thepound;nuclei. 1917 prices on request. Write

J. B. Hollopeter . . Rockton, Pennsylvania

BEE SUPPLIES Send your name for new catalog.

Dept. T, CLEMONS BEE SUPPLY CO.,
128 Grand Avenue, Kansas City, Mo.

"Griggs Saves You Freight"

TOLEDO

is the place to order your 1917 supplies from, and GRIGGS is waiting for your order.

We are well supplied with a fine stock of Root's Goods for the following season; and if a saving of time and money means anything to you, Mr. Beeman, wherever you are, don't overlook getting our catalog and prices.

Promptness and satisfaction is our motto, whether you have one hive or 500.

HONEY and Beeswax always wanted. Special price list on bees and queens, also Poultry Feeds, mailed with Catalogs.

S. J. GRIGGS & CO.
Dept. 25 Toledo, Ohio
"Griggs Saves You Freight"

When Ordering Supplies

remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad - Maine Central and Grand Trunk. Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager.

Eastern Beekeepers

This is the time you will need hives, sections, and foundation. Let us mail you our catalog giving prices on everything a beekeeper needs. We furnish full and nucleus colonies, bees by the pound, and queens.

A 3-fr. nucleus colony and Italian queen in a shipping-box, $5.10; tested Italian queens, $1.50; untested, $1.10.

Our location enables us to get goods to you promptly.

I. J. Stringham, 105 Park Pl., N. Y.
Home Apiary: Glen Cove, L. I.

Beginner's Book of 28 Pages, Free

Also our 44-page Bee-supply Catalog for 1917 is ready for mailing. Ask for your copy now.

OUR PRICES ON BEES AND QUEENS: 1 lb. of bees with queen, $2.25; 10 lbs., $20.50; 100 lbs., $190.00; 1 frame with queen, $2.00; full colonies, one-story hive included, $8.75; untested queens, 75c each. Our complete price list free, and safe delivery guaranteed.

The Deroy Taylor Company, Newark, N. Y.

3-banded Italians...

From May 1 until June 1
Untested, . . . $1.00; six, $4.50; twelve, $8.00
Tested, ... 1.25; " 5.50; " 10.50
From June 1 until November 1
Untested, ... $ .75; six, $4.00; twelve, $7.50
Tested, ... 1.00; " 5.00; " 9.00
Select tested, $2.00 each. See ad. in April 1 "Gleanings."
Circular free.

John G. Miller, 723 C St., Corpus Christi, Tex.

Full Values in

"Falcon" Beekeepers' Supplies

For the last forty odd years during our manufacture of "FALCON" supplies it has been our endeavor to place upon the market the very best possible line of supplies, and we pride ourselves in having accomplished this. "FALCON" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "FALCON" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "FALCON" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid Dealers Everywhere "Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK
where the good beehives come from.

Quality Service System

Buy Marchant's Queens and get Results

Requeen Now

We have in operation over 1000 nuclei; we are prepared to take care of your order, both LARGE AND SMALL; our queen business for the past two months has been larger than ever before; why? because our stock gives results. We are offering queens at the following prices for JUNE, JULY, AUGUST, and SEPTEMBER.

Untested, 1, $1.00; 6, $5.00; 12, $9.00; 25, $15.00; 50, $30.00; 100, $52.00.

Tested, 1, $1.50; 6, $8.00; 12, $15.00. Breeding queens, $5.00.

Select tested, 1, $2.00; 6, $10.00; 12, $18.00. Select breeding queens, $10.00.

Never before has this strain of bees been put on the market at such a low price; take advantage and re-queen your yard with the best strain on the market.

J. E. Marchant Bee & Honey Co.
Columbus, Ga., U. S. A.
The home of the Southern honeybee.

Queens of MOORE'S STRAIN of Italians

PRODUCE WORKERS
That fill the super quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.
Untested queens, $1.00; six, $5.00; 12, $9.00.
Select untested, $1.25; six, $6.00; 12, $11.00.
Safe arrival and satisfaction guaranteed.
Circular free.

J. P. MOORE,
Queen-breeder Route 1, MORGAN, KY.

Mott's Northern-bred Italian Queens

are hardy, prolific, gentle, and hustlers, therefore resist well disease.

Untested, $1.00 each; $9.00 for 12.
Sel. Tested, $1.50 each.
Virgins, 50c each; or three for $1.00.
Bees by pound.
Plans "How to Introduce Queens," and "Increase," 25c. List free.

E. E. MOTT, Glenwood, Mich.

Honey Wanted

For our Honey trade we will require of this season's crop, if available, about 50 carloads in excess of the crops from Apiaries producing for us.

The interest in Airline Honey in all of the markets where it has been sold has greatly exceeded the anticipations of all. We believe that the Airline campaign with its various forms of publicity and work has brought about interest in the use of honey. far beyond the conception of anyone at this time, except those most intimately familiar with its present status. This new interest in honey all over the U. S. is responsible, we believe, for the present bare markets, active demand, and good prices.

The hearty support of many large producers and dealers has been greatly appreciated by us the past year.

We again invite the continued cooperation of all producers and dealers; for without this we certainly cannot continue our large and expensive campaign to popularize honey. We confidently believe with active cooperation that we can secure for honey producers greater results in the coming year than in the past.

Please remember that we buy only for our trade. We do not speculate in honey. When you are ready to contract or sell, write or wire us. We are interested in crops both large and small.

The A. I. Root Company, Medina, Ohio

QUALITY BLANKE MARK

Blanke's BEE BOOK

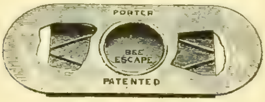
This book describes our line of bee supplies. It contains much information valuable to the beekeeper.

We are centrally located. Shipments out of St. Louis will reach you promptly, and our long experience in this line enables us to fill your orders accurately. . . .
Write for Blanke's Bee Book—it's FREE.

BLANKE MFG. & SUPPLY CO.
214-216-218 Washington Avenue, St. Louis, Missouri

PORTER BEE-ESCAPE

Saves Honey, Time, Money



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THE A. I. ROOT CO., Medina, Ohio
General Agents for the United States

R. & E. C. PORTER, Manufacturers
Lewistown, Ills., U. S. A.

ALWAYS ON TOP

Established 1885

It will pay you to get our 50-page catalog and order early.

Beekeepers' Supplies

The Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

AT BOSTON

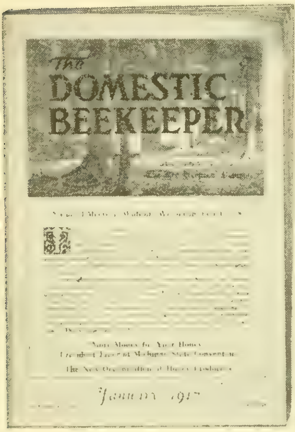
New England beekeepers will find everything in the way of supplies they will need the coming season. Place your orders early and avoid the rush. Send for catalog.

H. H. JEPSON, 182 Friend St.

New England Beekeepers

Every Thing in Supplies
New Goods Factory Prices Save Freight

Cull & Williams Co., Providence, R. I.


The DOMESTIC BEEKEEPER
January 1917

A SPECIAL INTRODUCTIONAL OFFER.

THE DOMESTIC BEEKEEPER

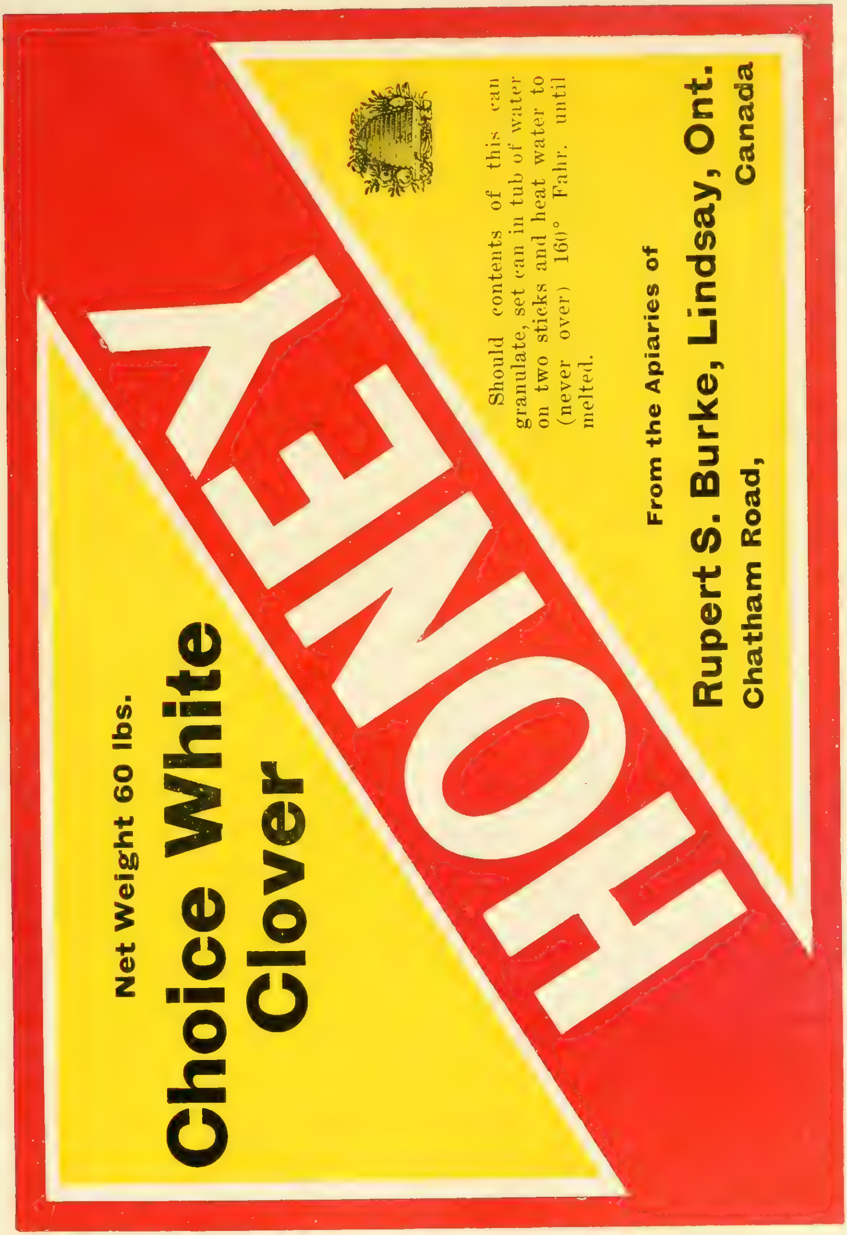
For Six Months for Only 25 Cents

The Domestic Beekeeper (successor to the Beekeepers' Review) is now a 48-page magazine with cover, much larger and better every way than the old Review. . . .

We want you to see for yourself what a large and interesting journal the **Domestic Beekeeper** is and are offering you this special price for a trial subscription for six months. Just wrap 25c in one or two cent stamps in a paper and mail it to

The Domestic Beekeeper . Northstar, Mich.

See Labels shown on Pages 417 and 418 of this Issue



Net Weight 60 lbs.

Choice White Clover

HONEY

Should contents of this can granulate, set can in tub of water on two sticks and heat water to (never over) 160° Fahr. until melted.

From the Apiaries of

Rupert S. Burke, Lindsay, Ont.

Chatham Road, Canada

No. 5

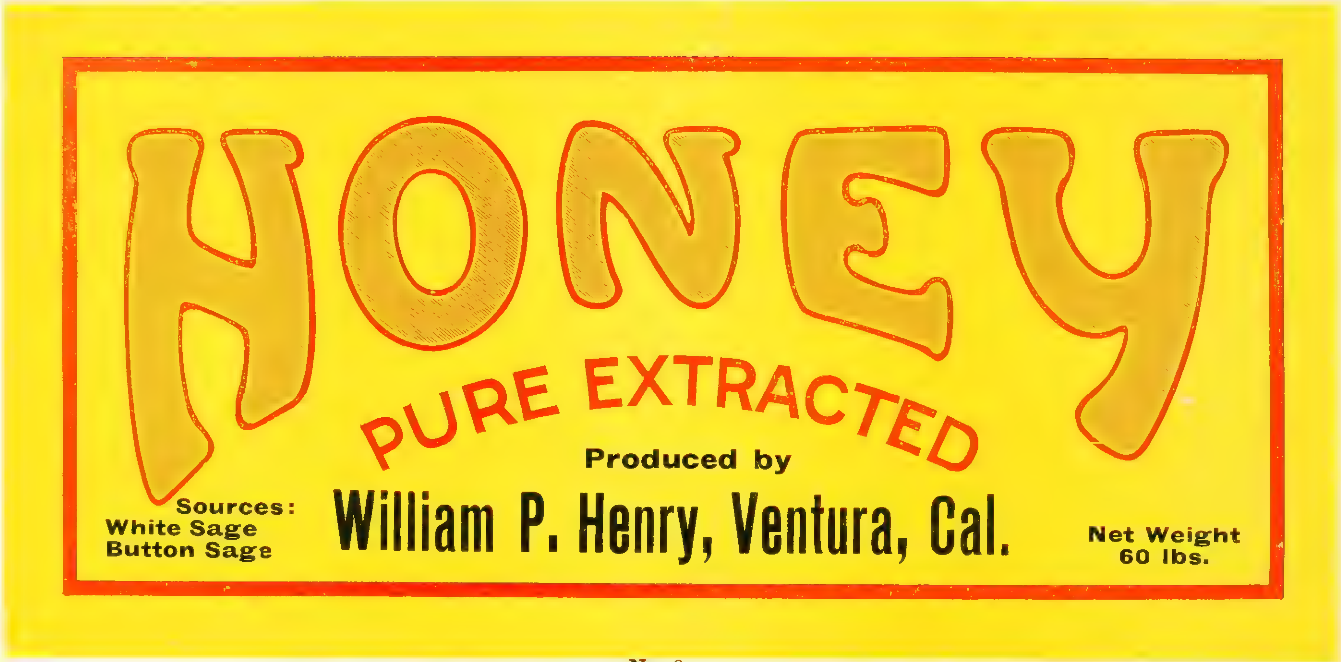
No. 5 shown above is for use on 5 or 10 lb. pails, or for one or five gallon square cans. It is very striking, and can be read from a great distance. Wording except HONEY can be changed to suit.

Prices—Special for 30 days

No. 5 (Ungummed) in lots of	100........$1.00	500........$2.75
	250........ 1.50	1000........ 5.00

Send Your Order to **THE A. I. ROOT CO., MEDINA, OHIO**, before July 1 for Special Prices.

See Sample Labels Pages 417 and 418 this issue, also last page.


HONEY
PURE EXTRACTED
Produced by
William P. Henry, Ventura, Cal.
Sources:
White Sage
Button Sage
Net Weight
60 lbs.

No. 6

This is an ideal label for a 10-lb. pail or 5-gal. square can. Wording may be changed to suit except "HONEY" and "Pure Extracted." Like the label on last page, this is absolutely new and unique in design.

Write us for prices on labels of your own design, sending us sketch and number of colors wanted. We shall be glad to make you estimates.

Prices—Special for 30 days

No. 5 (Ungummed) in lots of 100	$1.00	500	$2.75
250	1.50	1000	5.00

Send Your Order to THE A. I. ROOT CO., MEDINA, OHIO, before July 1 for Special Prices.

ENLIST

in the growing army of honey-producers who are preparing to do their bit for Uncle Sam and the Allies by endeavoring to secure a bigger crop of honey than ever before. . . . Prospects are very bright for a bumper yield. Are you ready for it? Don't wait for prices to soar again, but place your order now. . . . .

The A. I. Root Company
Medina, Ohio

New York
Chicago
Philadelphia
Des Moines
Syracuse

San Francisco
Los Angeles
St. Paul
Indianapolis
Washington

If you use full sheets of foundation in your sections and frames, you are wise, but --- you are wiser if you insist on using ---

Dadant's Foundation

Why? Read the following:

Dadant & Sons, Hamilton, Illinois.

Dear Sirs:—Looking the accounts over we still have 9 pounds of beeswax to our credit. Could you hold this, as we intend to ship more wax before next season? We will use DADANT'S FOUNDATION **only** as it has proved BEST by TEST.

Yours very truly,

Hebron, Ind., Nov. 16, 1914. Van Wyngarden Bros.

We have many customers who tell us the same thing. Try it yourself and be convinced.

For making Dadant's Foundation we need immense quantities of beeswax

When you have some to offer, drop us a line and get our prices. We buy at all times and pay highest prices.

BEESWAX WORKED into foundation at reasonable prices. OLD COMBS rendered into beeswax on shares or for cash. Let us do all this work for you and save you time and money.

Dadant & Sons, Hamilton, Illinois

BEE SUPPLIES

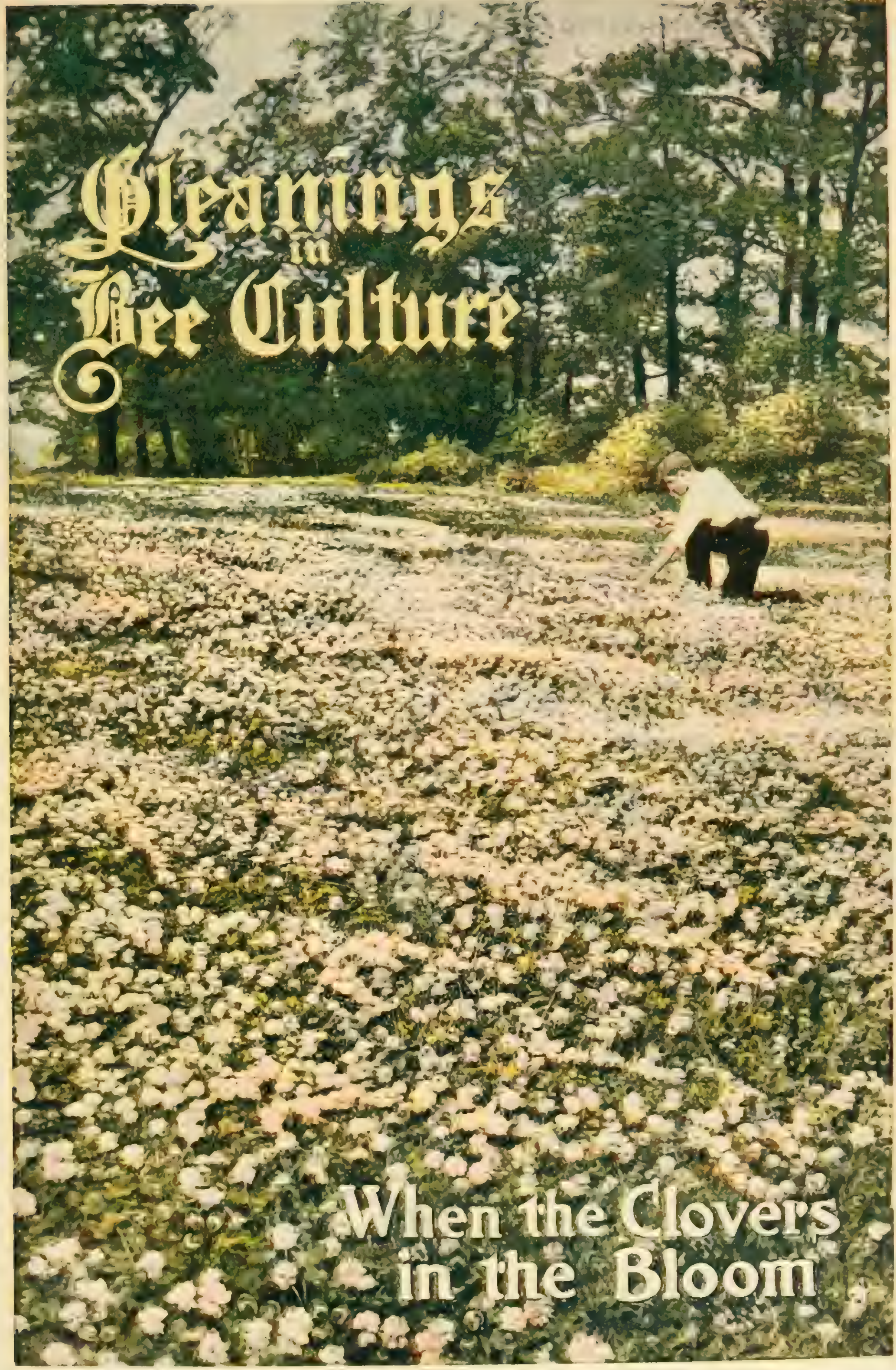
We have everything in the supply line and keep an immense stock on hand so as to fill orders promptly.

[illegible] CATALOG

Lists everything of practical value to the beekeeper. Several new articles listed this year.

Drop us a card and get

Gleanings in Bee Culture



When the Clovers in the Bloom

Vol. XLV July, 1917 No. 7

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you SPOT CASH for any thing you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

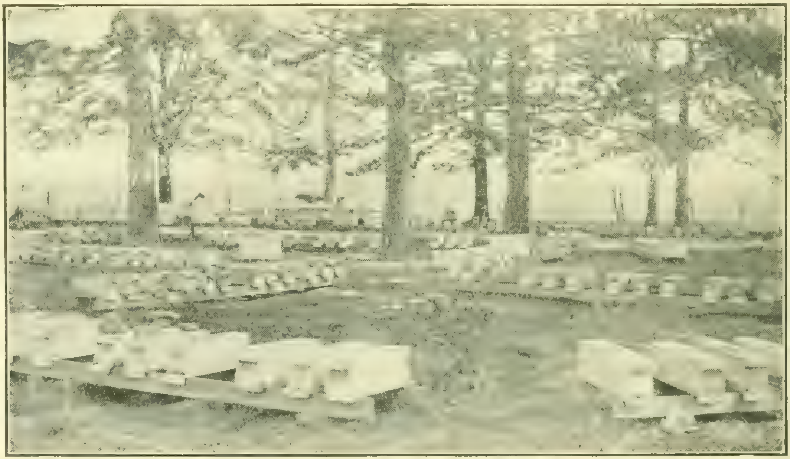
QUEENS . QUEENS . QUEENS

Untested,	1, $ .75	12, $8.00	100, $60.00
Tested,	1, 1.25	12, 12.00	100, 90.00
Select Tested,	1, 2.00	12, 20.00	

We can supply either the domestic or imported strain of the three-banded Italian. Neither can be beaten. Write for circular telling more about them. Pure mating, safe arrival, and satisfaction guaranteed.

R. V. Stearns, ... Brady, Texas

Southern Headquarters for Three-banded Italian Queens



To supply the increasing demand for our queens we are now running nearly twice as many mating-boxes as last year, and six times as many as six years ago. We spare neither labor nor money to produce the very best that can be had. We are careful about our breeders for producing our queens and drones. We use the best methods to produce the best queens.

Untested queens	June, 1, $ .75;	12, $ 8.00;	100, $ 60.00	July, 1, $ .60;	12, $ 7.00
Tested queens	June, 1, 1.20;	12, 14.00;	100, 115.00	July, 1, 1.05;	12, 12.00
Select tested queens..	June, 1, 1.90;	12, 22.00;	100, 180.00	July, 1, 1.75;	12, 19.25

Very best queens for breeders, $3.00 each.

If any of our untested queens prove to be mismated we are willing to replace them free of charge. No foul brood has ever been in our vicinity. Safe arrival and satisfaction I guarantee.

W. D. Achord, Fitzpatrick, Alabama

CONTENTS

JULY 1917

Editorial 509
Bees in the Middle West ....E. R. Root 512
Law-breaker a Public Benefactor ....Dr. E. A. Morgan 516
The Maximum Crop of Honey ....Harold Horner 516
The Clovers of Tennessee ....J. M. Buchanan 520
We Have Not Done It ....The Editors 522
Conversations with Doolittle ....G. M. Doolittle 523
Letters from a Beekeeper's Wife ...."Mary" 524
How I Cured European Foul Brood ....M. W. Harvey 525
European Foul Brood,—How it Spreads..............R. F. Holtermann 526
Bees Fly Fourteen Miles for Honey.......................E. P. Stiles 526
A Visit to Charles E. Stewart.......................R. F. Holtermann 527
Sprinkling the Loafers with Honey.................J. Ford Sempers 528
Degenerating Apiaries ....E. G. Baldwin 529
Swarm Prevention and Control ....P. C. Chadwick 530
Stray Straws ....Dr. C. C Miller 531
Siftings ....J. E. Crane 533
Beekeeping as a Sideline ....Grace Allen 534
Our Food Page ....Stancy Puerden 536
Our Neighbor's Fields ....E. G. Baldwin 538
Beginners' Lessons ....H. H. Root 539
Mother Bee Nursery Rhymes ....M. G. P. 543
Gleanings from the North, South, East, and West........Dept. Editors 544
Gleaned by Asking ....E. R. Root 552
Question and Answer ....Grace Allen 554
Just News ....The Editors 555
Our Homes, Gardening, Health Notes, Temperance.......A. I. Root 556-563
Who's Who in Apiculture 563

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(Entered as second class mail matter at the Postoffice at Medina, Ohio.)

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

Editorial Staff

E. R. ROOT	A. I. ROOT	H. H. ROOT	J. T. CALVERT
Editor	Editor Home Dept.	Managing Editor	Business Manager

"When we receive your Honey
Return mail brings your Money."

The Fred W. Muth Co.

Get Service Like this Man

Lake City, Mich., May 5, 1917.

Friend Muth:—Your letter with check for $146.20 for wax has been received. Thanks. I do believe you beat them all when it comes to quick returns for goods shipped you. I may have some more wax to sell after we get our cappings melted.

Yours truly,
(Signed) Elmer Hutchinson.

We Want Immediately

Extracted Honey

We buy all grades of Extracted Honey. Large or small lots. Send sample and price. If price is right we will buy. Parties who have Fancy and No. 1 Comb Honey, write us at once. We will buy from 40 to 50 carloads this season.

Beeswax

Send us your beeswax. We pay highest market prices, and send you our check the same day shipment is received.

Old Comb

Make some spare money from the wax rendered from your old comb. We will render it, charging only 5 cents per pound for rendering, and pay you best market prices for the wax rendered.

Shipping-cases for Comb Honey

We are prepared to ship you the same day order is received any number of shipping-cases. Several carloads are here now, ready for buyers. Send your order in now before our supply is exhausted. We sell Lewis Beeware.

Remember We remit the same day your shipment arrives. Read the letter above and be convinced that this is the house to send your shipments to. Try us.

The Fred W. Muth Co.

"The House the Bees Built"

204 Walnut St., Cincinnati, Ohio

HONEY MARKETS

So many different kinds of reports are afloat that neither the buyer nor producer of honey knows what the price is or should be. That it is high is very certainly true, as the reading of the quotations below will show. That it may go higher is doubtful in view of the fact that granulated sugar has dropped in price within a month; so also has wheat and some other staples. Honey is likely to go up or fall with other food prices. If Congress shuts off the food-speculator, all prices may come down.

As the food-speculator seems to be abroad in the land, trying to corner the market on general food staples, it is possible and even probable that the same class of chaps are trying to corner honey. At all events, there is some evidence to show that some one has been trying to "bear" the market at the present time, claiming that the allies have discovered a cheap substitute—molasses at 6 cents that will take the place of honey, and that, therefore, the market on honey is going down; but careful inquiry shows no such product at this price on the market.

If it is true that the food-speculators are trying to corner honey along with other commodities, they will endeavor to "bear" the market while they are buying; and then when they have bought all the available supply, both present and future, will boost prices. They will be the fellows who will rake in the shekels, and the beekeeper may be berating himself because he was not in the final roundup.

No one knows yet what the crop of honey is to be this year. In many of the clover regions, owing to unfavorable weather honey is not coming in, and thousands of colonies at this writing (June 22) are or were on the verge of starvation, and the beekeepers waiting expectant for the shower of honey which they hope will come. A recent report from California shows that weather conditions are unfavorable.

The dry weather of last fall and the chilly and backward weather of this spring would indicate that the clover crop in some sections will be lighter than last year, which fact would have a tendency to boost prices. Over against this, frequent and copious rains, as shown by the Government weather maps, in the clover regions, would have a tendency to prevent a rise above the present level.

Orange and some sage has already sold as high as 13 and 14 cents in California; but some bottlers say that they cannot afford to pay above 10 or 11 cents, as a 12 and 13 cent extracted would make extracted at retail 30 or 35 cents against a comb honey of the same quantity for 25 or 35 cents. It is probable that the discriminating housewife would not pay more for extracted than for comb, quantity for quantity.

NEW HONEY CROP AND MARKET REPORTS.

We have the following special and late reports of the new honey crop, date of June 20:

Redland, Cal.—Crop less than one-half normal, mostly choice white; buyers eager at 13 to 13½ cents; darker, 11 to 12½; alfalfa districts prospects much below normal; crop mostly sold. A few are holding for 15 cents. Hottest in 40 years, being 120 in the shade; plants badly injured; prospects very poor.

Los Angeles, Cal.—Honey secured is only 25 per cent of normal; estimate, 40 per cent for season in south; quality excellent; buyers very active, paying 12 to 14½ to producers; white, better. A few producers are holding for 15 cents. Retail market unsettled, little used, not worth quoting. Extreme heat burning flora and bees melting down; also great damage by fires.

San Jose, Cal.—Very little new crop honey ready for market. Season late owing to cold weather. Light-amber mustard honey (canned) selling for 10 cents. Some holding for 12. Buyers offering from 8 to 12 cents according to grade; all demand is for extracted. One-half crop or better in northern California.

Texas.—Two-fifths of crop is lost; one-fifth of normal crop is now harvested; additional two-fifths will be normal. Quality is normal. Tendency of buyers to contract early for entire crop. Ten to 12 cents is asked for extracted. Some are holding for 15 cents. Continued drouth may reduce normal yet to harvest.

Florida.—This state's honey crop is very light; comb honey a failure due to freeze and dry weather. Prospects for future crop good. Quality good. Buyers offer one dollar F. O. B. Sanford for crop. Producers holding at 55 to $1.75 F. O. B. market.

MARKETS BY CITIES

NEW YORK.—Comb honey, old crop, is fairly well cleaned up, with the exception of lower grades, of which there is still some in the market, but no demand to speak of. As to No. 1, or fancy white, there is some which has been carried over; but the demand is not as good as it formerly was, and hard to find buyers at around 13 to 14 cts., and this in a small way only. For extracted honey, the market appears to be in a very unsettled condition, and all kinds of prices are being quoted. Last year's crop is practically cleaned up, and receipts from the West Indies have been rather light of late; but it appears that a good crop has been produced in the southern states, and is now beginning to arrive quite freely. The demand is fair, at prices varying from 90 cts. to $1.20 per gallon, according to quality.

New York, June 18. Hildreth & Segelken.

CHICAGO.—As yet, none of the yield of 1917 has appeared on this market. There is no honey to be had among the jobbers, and very little is left in the hands of retailers; hence there is a probability of higher prices on the new crop when it comes, and we should have some by the time this appears in print. We expect now to get 17 to 18 cts. per lb. for the comb that will range from No. 1 to fancy, and it may be that we can get a little more for a time. Extracted is commanding at the present time from 12 to 14, for the reason that there is practically none offered in clover or the other white honey. Amber grades are also absent, including buckwheat. Beeswax is steady around 35 cts. per lb.

Chicago, Ill., June 18. R. A. Burnett & Co.

LOS ANGELES.—All old crop of extracted was cleaned up two months ago. Small stocks of comb held over with price normal, but new crop of extracted prices are soaring to the skies. Some producers are holding for 15 cts. in car lots for white orange, some having sold at various prices ranging to 14½ cts. f. o. b. Demand is active, crop limited. Little sage is out yet. Too much variation in local market to make quotations useful.

Hot wind continues, bad fires in hills and lots of bees melting down. This will affect honey production seriously. Many beemen report "no more honey."

Los Angeles, Cal., June 16. Geo. L. Emerson.

PHILADELPHIA.—From our observation of our honey market, under grades of comb are nearly if not all sold. We have been entirely sold out of sub grades for some time. There is some fancy old comb on the market which is being held at around 18 cts. for well-filled combs. As to demand, there is none in our market until early fall. As to new

honey, we have had a few inquiries as to probable prices on comb, but no shipments worth speaking of. We have had a small quantity of comb from North Carolina of nicely filled combs, but amber in color. No demand at present, but think the same should bring 14 to 15 in season. Charles Munder.
Philadelphia, Pa., June 21.

PORTLAND.—The stock of old comb honey is about cleaned up, but the demand remains good. At present there is no new comb honey on the market, on account of the lateness of the season and the excessive freight rate on local shipments by rail—double first class. No quotations from any of local beemen yet on new extracted, other than California dealers, who quote water white at 10 cts., and in a few instances 12; amber at 9 and 10.
Portland, Ore., June 11. Pacific Honey Co.

SAN FRANCISCO.—No honey of the old crop is in the city. Some new lots of honey are coming in from the orange and sage sections, and bring pretty high prices, ranging from 11½ to 12½ for the lighter grades. It is too early yet here to make regular quotations. The demand for darker grades is not very brisk, and it is only early white honey and light ambers that receive attention.
Leutzinger & Lane.
San Francisco, Cal., June 15.

KANSAS CITY.—There is very little if any old honey on this market. Comb honey is entirely cleaned up. There is a little new honey on the market, but it is light weight and sells at $3.65 to $3.75 per case. The demand for comb honey is good. Do not know how the trade is going to accept extracted honey this season at the high prices now being asked for the same. C. C. Clemons Bee Supply Co.
Kansas City, June 18.

CLEVELAND.—Old comb honey is practically used up and there is scarcely any call for it. A small quantity fancy would sell at about $4.00 per case of 24 sections. We have seen no new honey yet except a small sample shipment from Florida. Fancy light and amber—a little of it would probably sell at $4.25 to $4.50 for fancy and $3.75 for amber. The extremely high freight rate however is almost prohibitive. C. Chandler's Sons.
Cleveland, O., June 22.

BUFFALO.—White honey is about cleaned up and there is a very small amount of dark buckwheat honey on this market, we hardly believe that there is over 2000 pounds of honey to be found on this market at the present time. The demand is only fair—in fact, sales are being made practically only in single-box lots. Gleason & Lansing.
Buffalo, N. Y., June 22.

DENVER.—Neither comb nor extracted honey in this market. The old crop has been exhausted for some time and it will be at least several weeks before any of the new crop will come in. The prospects are only fair. We are in the market for beeswax and pay 38c per lb. in cash and 40c in trade for clean yellow wax delivered here.
The Colorado Honey Producers' Association.
Denver, Col., June 19. F. Rauchfuss.

ST. LOUIS—Extracted and comb honey are cleaned up. Good amber honey, in 60-lb. cans, would easily bring from 11 to 13, and in barrels from 8½ to 10, according to quality. So far no new honey has arrived here from the South. Beeswax is quoted at 42 for prime. R. Hartmann Produce Co.
St. Louis, Mo., June 18.

PHOENIX.—The 1916 crop of honey has been an article of the past for many months. Demand great. The new honey has been on our market for a few days at very high prices, quality fair. Some mesquite of extra quality will move about July 1 at approximately $12.00 and over per case. Many buyers—light crop. Wm. Lossing.
Phoenix, Ariz., June 13.

TEXAS.—Terribly severe drouth in southwest Texas for several months, and honey crop here is almost a total failure. No old honey on market for several months. A few small shipments have been made of huajilla and catclaw of the new crop that finds ready sale at 12 cts. for the bulk comb and 10 for extracted, packed in two 60's with half-cent rise for the smaller sizes per pound. The high prices for wax have taken up the surplus. J. A. Simmons.
Sabinal, Texas, June 13.

TORONTO.—We are really not in position to state exactly what quantity of old honey remains on this market. Stocks of honey in this city are held by so many different parties who do not make reports on them that it would be quite impossible to make a reasonable guess. The stock in the hands of the honey-producers, we are informed, is completely exhausted, and the demand, owing to the arrival of some new fruits, has slackened up considerably. There is at present no new honey on this market, altho we expect the first deliveries about July 1. Eby-Blain, Limited.
Toronto, Can., June 19.

MONTREAL.—No new honey has been marketed yet. Buckwheat honey is particularly cleaned up. There is some white-clover honey, but the quantity is not large. No. 1 comb is selling from 17 to 18; extracted, in barrels, 13; tins, 13½ to 14.
Gunn, Langlois & Co., Ltd.
Montreal, Can., June 18.

CUBA.—Have just entered into a honey-flow preceded by a flow from mangle; and during May I secured 300 barrels of 50 gallons each; and during this month I may get 200 barrels more; and I may even have a flow up to November. This honey has been sold for use in France. The yield of honey in the country will be very light—probably not 1500 barrels. Adolfo Marzol.
Matanzas, Cuba, June 12.

MEDINA.—The 1916 honey crop is practically off the market and worthy of no attention now. The 1917 crop has begun to move in a very limited way from the Southern states and southern California, but it is too early to forecast the crop of the United States. Severe winter losses in a few localities will be offset by the excellent conditions of bees elsewhere. The season is 10 to 15 days late thruout the entire North, but promises well at this writing, provided favorable weather continues for the next 30 days. If bad weather follows, the crop will be shortened accordingly. For white extracted honey, we believe the price for domestic trade will average 25 to 40 per cent above last year. We are contracting for comb honey at prices ranging from last year's standard to 10 per cent above. We believe that white extracted honey in eastern localities will net producers 10 to 12 cts.; comb honey, 14 to 16. The wide variation in quality, as well as the style of package, makes it impossible to quote more definite general prices, and the necessity for well-defined standards is more apparent every day. Advices received just as we write this indicate that more favorable weather has followed in California, and the market is reported easier there. The A. I. Root Co.
Medina, O., June 25.

U. S. GOVERNMENT MARKET REPORT.

Here is the first semi-monthly honey market news report from the Office of Markets, U. S. Dep't of Agriculture, date of June 15:

Kansas City.—No carlot receipts. Old supply practically exhausted. Good demand. No. 1, comb, mostly $3.65 to $3.75 per case. No. 2, cleaned up. Extracted practically exhausted; pails, white, 11½ to 12, amber, 11, quoted for Missouri honey. New crop late. Will begin to move about July 1.

Denver.—No receipts. Old crop exhausted. New crop will start moving about July 15. Season late.

Philadelphia.—Arrivals approximately 14 barrels Southern and 13 barrels Mexican. Market very unsettled, practically no sales. Cuban and Mexican quoted 12½ to 13. Comb, no arrivals and no sales.

Chicago.—No receipts. Supply negligible. Occasional sales to old customers at 12 to 13.

Cincinnati.—No carlot receipts. Market bare.

St. Louis.—No receipts. All honey out of first hands. No recent sales. New crop not available until July or August.

New York.—Arrivals, 277 barrels Cuban of about 50 gallons each. Other receipts light. Extracted Southern, $1.00 to $1.25 per gallon. Some sales. Cuban for export reported as high as $1.80 per gallon. No comb honey.

Northern-bred Italian Queens

Our queen-rearing apiary is in charge of Mr. M. H. Hunt, Redford, Mich. . We offer choice stock, and guarantee safe delivery. . . Orders filled in rotation as received.

Untested Italian Queens . . .	each, $1.00;	three for	$2.75
Tested Italian Queens	" 2.50;	"	7.00
Select Tested Italian Queens .	" 3.00;	"	8.00
Select Breeding Queens . . .	" 5.00		

Will give special rates on quantities on application.

M. H. Hunt & Son, Lansing, Michigan

General Agents in Michigan for Root's Bee Supplies

NOTICE!

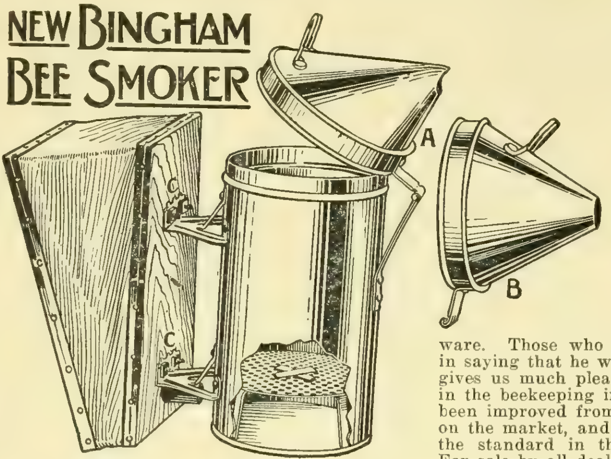
Honey . Wanted . Honey

Do not forget, when your crop of honey is ready for sale, to send us a sample. State your price, also how it is put up. We are in the market for unlimited quantities, and will pay cash on arrival. Let us hear from you before selling your crop.

C. H. W. Weber & Co., Cincinnati, O.

2146 Central Avenue

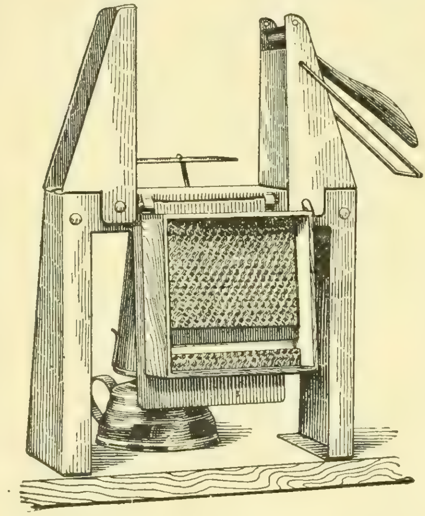
NEW BINGHAM BEE SMOKER



In 1878 the original direct draft bee smoker was invented and patented by Mr. T. F. Bingham of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey-knife for nearly thirty-five years; and in 1912, becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general beeware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men and it gives us much pleasure to help perpetuate his name in the beekeeping industry. Bingham smokers have been improved from time to time, are now the finest on the market, and for nearly forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.

Smoke Engine, 4-inch stove........	$1.25
Doctor, 3½-inch stove............	.85
Two above sizes in copper, 50 cts. extra	
Conqueror, 3-inch stove...........	.75
Little Wonder, 2½-inch stove	.50

Hinged cover on two larger sizes.
Postage extra.



Woodman's Section-fixer

A combined section press and foundation-fastener of pressed-steel construction. ONE OF THE GREAT ADVANTAGES this machine has over all others on the market, in the putting in of top and bottom starters is, YOU ALWAYS HANDLE LARGE PIECES OF FOUNDATION. You know how hard it is to set small narrow pieces for bottom starters. With this machine a large piece of foundation is set and the hot plate is again used to cut it off, leaving the narrow bottom starter. What is left of the large piece is then set for the top starter. Another advantage is the section always comes away from the machine right side up with top starter, large piece, hanging down, and does not become loosened in reversing as with other machines.

Price of machine $2.50; with lamp, $2.75. Weight 5 lbs., postage extra.

Tin Honey-packages

A local wholesale house secured a carload of tin plate in September that was promised for April. Conditions are now even worse. When it is necessary to order tin plate a year or more in advance of the time it is wanted for use, advances in prices must be expected. The highest bidder will get the stock. Freight at this time is very slow and uncertain. Prices are liable to advance. It would be a wise thing to secure your packages for the 1917 crop. Our three-year contract is giving us some advantage over general market quotations. Send us a list of your requirements at once.

FRICTION-TOP TINS

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	...	12	6
Crates holding	...	...	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

A. G. Woodman Co., Grand Rapids, Michigan

Parcel Post for Small Orders

You may be in need of foundation or sections. If so, you will get it delivered quicker and right to your door. . . . .

5 lbs.	Foundation	will take	11c
2 lbs.	"	"	8c
1 lb.	"	"	6c
500	Sections	"	41c
250	"	"	24c
100	"	"	11c

Remember Foundation has advanced 10c per lb. Parcel-post shipments have increased wonderfully.

F. A. Salisbury, Syracuse, New York
1635 West Genesee St.

WE NEED HONEY

Our local sales of honey have increased greatly in the last year or two, and we need much more extracted honey than we can produce for our trade. Before selling your honey let us have a chance to make a price on what you have to dispose of. Send us a sample; tell us the amount you have and how put up, and we will tell you what we can offer spot cash for it.

Save Your Combs and Cappings

and send them to us. Our high-pressure outfits and special equipment will get out all the available wax. The extra wax we get usually more than pays for rendering charges.

For your share of wax we will either pay you the highest cash price or work it for you into

Dadant's Foundation

If your bees are not already acquainted with DADANT'S FOUNDATION you should give them a chance to test it. Their action will be more convincing than our words, "Best by Test."

One prominent state inspector in the east wrote us in June:

"Dadant's Foundation is Perfect."

It represents our best efforts. Satisfaction guaranteed, and prompt returns as soon as shipments reach us. Write today for shipping tags and beeswax prices.

Dadant & Sons, Hamilton, Illinois

GLEANINGS IN BEE CULTURE

JULY, 1917

EDITORIAL

A discussion of honey and market crop conditions will be found in market page elsewhere.

DON'T THROW AWAY GOOD BEESWAX

IN THESE DAYS, when our attention is being called to the necessity for conserving every kind of material, beekeepers should not forget that it is very easy to throw away dollars — yes, hundreds of dollars—in scraps of beeswax. Now that wax has become so much more valuable, it is all the more important that the waste be reduced to the smallest possible amount.

A small bee-tight and honey-tight tin box should always be carried when one is working about the apiary, as a part of the regular tool kit or equipment, to hold the scrapings and bits of burr or brace combs. This box must be tight so that any honey may not leak out and attract robbers.

The box should be emptied, when full, into a solar wax-extractor, which for such purposes need not be very large nor expensive. Such an outfit will more than pay for itself in convenience, for it costs nothing to operate it, and the resulting wax is always of the very finest quality. The beekeeper who throws away or burns up the refuse from a solar extractor is making a wasteful mistake, for it contains anywhere from twenty-five to fifty per cent of wax. Such material should always be run thru a good wax-press. It should be saved, in barrels, to be rendered out during the winter months when time is less valuable.

CAUTION IN THE USE OF SULPHURIC ACID IN CLEANSING BEESWAX.

If one has the proper equipment sulphuric acid may be used for refining wax. Since the acid will attack iron or copper the most practical material for a tank is lead. A wooden vat must be used, therefore, lined with sheet lead, the heat being introduced into the water in the lower part of the vat by means of steam. Water should be poured in until the vat is a little less than one-third full, then the steam turned on and the wax cakes thrown in as rapidly as they melt, until the vat is nearly full. When the whole contents have become thoroly melted a very small amount of sulphuric acid should be poured in. Light-colored wax needs less than dark dirty wax. About three ounces is sufficient for a hundred pounds of average wax. The boiling should not continue very long after the acid has been added. One-half minute to two minutes is sufficient, then the vat should be covered up and the impurities, carbonized by the sulphuric acid, allowed to settle into the water under the wax.

A GENERAL DISCUSSION INVITED

IN VIEW OF THE unprecedented condition of the honey market (along with unprecedented conditions of all markets) GLEANINGS is going to invite its readers, one and all, to join in a general discussion in its August number of present honey-market conditions and price prospects for the 1917 crop. "How to get the most for our honey" is the general theme that we ask our readers to discuss—and to do this with absolute freedom. Any man or woman who has any idea worth while, an experience that teaches a lesson, or a bona-fide honey-market quotation that has not been printed heretofore—we want it for GLEANINGS' columns.

Tell the truth, give the facts, frame the ideas clearly, do this briefly, and we shall be glad to print it.

Let us emphasize that we wish to have this discussion carried on with absolute freedom. Hew to the line and let the chips fall where they may. Give us your ideas, give us your facts, give us any genuine offer that you have had made you for your honey (telling who made it), give your experience. By so doing you may help yourselves and others get a better price for the 1917 crop of honey.

The A. I. Root Company are the publishers of GLEANINGS IN BEE CULTURE. The A. I. Root Company are the owners of the great Airline honey business. A. I. Root, E. R. Root, and H. H. Root are the editors of GLEANINGS. The A. I. Root Company and the editors of GLEANINGS join in asking for the fullest and freest discussion of every element in the honey market. They together are ready and glad to invite the honey-producing public to this discussion. All they ask is that articles contributed to it shall be to the point, shall be brief, and shall reach GLEANINGS office by July 12 at latest.

"Come, let us reason together."

DIAGNOSING COLONIES FROM THE OUTSIDE

AS MENTIONED elsewhere in this department, we have stated that many of our yards are betwixt swarming and starvation. In order to get a rapid survey of an apiary the editors have been diagnosing from the outside. A heavy flight of bees at the entrance indicates a fairly good colony. Its weight indicates something as to the amount of stores. The mere lifting of the cover with three or four puffs of smoke over the tops of the frames will show whether a colony is clean out of stores. After the smoke disappears, if there is any honey at all the bees will be seen with their heads dipped into the cells along near the top-bars; for smoke will always drive some bees to drinking honey. If every cell except those containing brood is dry, there will be no bees thus occupied and the hive should be opened up.

Another surface indication is the behavior of the bees toward the drones. If they are pushing one or more drones out of the entrance it indicates a stoppage of the flow or a shortage of stores.

Queenlessness can often be guessed when the cover is removed by the behavior of the bees.

Very recently we took a series of surface indications in one whole yard; then we went over it afterward in detail, examining the combs of the colonies. We found that the outside diagnosis was correct in almost every case.

When short of help we have relied to a considerable extent on external indications, and have found it works fairly well. A whole apiary can be gone over in a comparatively few minutes, and the remedy applied to those needing immediate attention.

Of course outside diagnosing can not be carried too far. It depends on what we want to know.

THE HONEY-CONTAINER SITUATION

IN CLOSING a discussion of the honey-container situation in June GLEANINGS, we said: "At this time we cannot say more to our readers as to 'where and how to procure containers.' We do promise them that we will give them the fullest information that either GLEANINGS or The A. I. Root Company may secure concerning any practical method of meeting the present critical need for satisfactory and economical honey-containers."

We regret to say that we cannot report any immediate or prospective change in the prevailing scarcity of glass containers for honey. So far as we can learn, the glass manufacturers are not putting out any glass containers except for use in preserving perishable food stuffs. What glass containers for honey can be secured by even the largest honey-bottlers are secured "hit or miss," "catch as catch can." The manufacturers are generally turning down the honey-bottlers' inquiries for contracts and deliveries or quoting enormously advanced prices without promise as to date of delivery.

Has the fiber container arrived as a substitute for the glass honey-container?

It has not, if railroad transportation is to be required of it. The fiber container (a treated paper product), with which The A. I. Root Company has been experimenting, has been given the test of railroad shipment. Cases (24) of these containers filled with honey were shipped in corrugated boxes to the several official railroad classification committees for approval and acceptance. These containers arrived at their destinations leaking badly, and so were rejected by the classification committees. The manufacturers of these containers now say that "it will take a little further experimenting and planning to work this out." So there is hope of a *future* fiber container that will stand railroad shipment, but it is not immediate.

However, this fiber container, we feel sure, will serve the purpose of a container for those who sell to the home market without railroad shipment. This in itself is important, and will serve many honey-producers.

The tin-can situation, so far as we can

learn (and so far as The A. I. Root Co. can secure information from the manufacturers) remains the same as a month ago. The dealers have limited stocks of five-gallon cans. They don't know and cannot learn whether they can secure more. One of the largest tin-can manufacturers in the country writes under date of June 9, in reply to an inquiry for five-gallon cans, as follows: "We have sold our entire output of these cans for perishable foods for this season. However, if you give us some idea of how many you desire, we will see what we can do to accommodate you." That expresses the exact situation in tin cans—acute shortage and uncertainty.

We think our advice of last month to producers of honey who must ship their crop was good and is good—inquire of their dealers for tin cans; and, failing there, have recourse to barrels.

Producers of honey that granulates quickly (alfalfa and sweet-clover honey) may take hope in a new sort of "Aikin" bag of paraffined heavy manila paper of a size to hold five gallons and to be contained in a fiber-board box. It is not expected that the railroads will raise any objection to this form of shipment; and the decided advantage of it is that the paper bags and fiber boxes can be shipped in the flat, greatly reducing freight charges as compared with tin boxes, and the cost of them will be from one-third to one-half less than the tin.

That is the honey-container situation so far as we know it today.

WINTER-KILLING OF ALFALFA IN THE MIDDLE WEST

ON ACCOUNT OF the winter-killing of alfalfa in the middle West, the Government is urging farmers to put in Grimm alfalfa. It is suggested that half-acre plots be tried alongside of the common varieties. This alfalfa grows without irrigation with a rainfall of less than 14 inches, and it is said to stand a winter temperature as low as 57 degrees below zero.

GLEANINGS wishes to suggest that the alfalfa-growers, where they have winter-killing, put in sweet clover. In fact, we positively know that in many sections of Illinois and Iowa sweet clover is being substituted, because it grows more readily, and because it stands unfavorable conditions better. While it has not quite the food value for stock that alfalfa has, it comes very near it, and is much easier grown; and besides this it is a great honey-plant. This is the only excuse we have for butting in on Government advice to farmers.

BETWIXT STARVATION AND SWARMING

AS POINTED OUT elsewhere in Straws, we believe we never had a year when bees bred up faster than this spring, and that, too, in spite of the chilly weather and a large amount of rain. A colony that is breeding heavily uses an enormous amount of stores. At the present time, June 14, clover is just on the eve of opening up, and our colonies are living from hand to mouth. Disliking to feed, we have been drawing on our sealed stores. These are running low; but every day we are expecting an onrush of clover honey. In the mean time some colonies are on the verge of swarming; and probably, when the first rush of nectar comes in, some of them will come out, altho we tamed them down by taking away from them hatching brood and giving to the medium colonies.

SWEET CLOVER AND ITS FUTURE IN THE MIDDLE WEST

OUR READERS WILL be interested, perhaps, in the article by E. R. Root, and particularly the one by Dr. E. A. Morgan, "the A B C scholar who grew so fast," on the subject of sweet clover and how to develop a poor bee territory into a veritable paradise for bees. The former law-breaker turns out to be a public benefactor—the man who sowed sweet clover and scattered it along the highways. It seems to be one of the very few cases where law-breaking is justifiable for the good of the public. Do not forget to read what Dr. Morgan says, on page 515 even if you do not read anything else these busy times.

HATCHING BROOD AS A COLONY BOOSTER

IT IS COMING to be generally believed among the fraternity that a colony may be too strong at the beginning of the clover harvest. Why? Because it is likely to swarm as soon as the first rush of nectar comes on. Operating on this theory this spring we have been taking hatching brood away from the very strong to give it to the medium colonies that are a little below par. It is somewhat surprising to note what "pep" one or two frames of hatching brood will give to a medium colony, especially this season. Our colonies this spring are of more nearly even strength than ever before in our history. If clover comes on properly, we ought to get something of a crop.

BEES IN THE MIDDLE WEST

Sweet Clover Making a New Future for Beekeeping in a Land Already Favorable for Honey Production

By E. R. Root

HORACE Greeley, when he gave out the slogan in the early 60's, "Go west, young man," must have had in mind the territory comprised by Indiana, Illinois, Iowa, Michigan, Wisconsin, and Minnesota. At all events, beginning with the western part of Ohio the soil seems to grow richer and darker, increasing in fertility and depth clear up into Kansas, Nebraska, and the Dakotas.

Some of the most productive land it has ever been my pleasure to see has been on a recent trip across the country to attend the field meet at Sioux City, Ia., located on the western border, and overlooking Nebraska and South Dakota. Indeed, from the hills around the city itself one can look over into three states.

Where I have seen good deep rich land on my various trips I have also found that bees flourish. The real honey-plants that yield table honey in quantity grow on good land, as a rule, altho there are some marked exceptions, as in the case of mountain sage of California and the sweet clover of the whole United States. But sweet clover thrives better on good land.

When all patriotic farmers are speeding up food production thruout the country, it did my heart good to see the immense amount of land that is being cultivated this spring. I think I never saw so much plowing and harrowing. Pastures and meadows are being plowed up to grow wheat and corn. The plowing up of clover-fields did not make me happy, but I said if the world can be better fed by plowing up our meadows and pastures of clover, then I welcome it. As a general thing, land devoted to corn and wheat does not help the beekeeper except in a very small way, for the pollen; but land plowed to alfalfa, and especially to sweet clover, means a great deal to the honey-producer.

The thing that delighted me was that many of the western ranchmen are beginning to learn that sweet clover is almost as valuable as alfalfa. It grows more readily than alfalfa, and as pasture does not bloat cattle like alfalfa. The result of it is that the business of honey production in the middle West is starting up in a way that is going to mean a great deal for the future of the beekeeper.

In the western part of Iowa the land is more rolling and quite hilly. Some of the hills are so steep that it is impossible for either plow or harrow to reach them. But some of the ranchmen have learned that sweet clover will grow on these tops. All that is necessary, I am told, is to scatter seed over these hills and let dame Nature do the rest. When the sweet clover gets well under way, the cattle and bees are turned loose.

As my train neared Sioux City, Ia., I noticed the land became more rolling and hilly, with vast stretches of deep rich land between the hills. The soil is so deep and rich that it needs no renewing; and the mar-

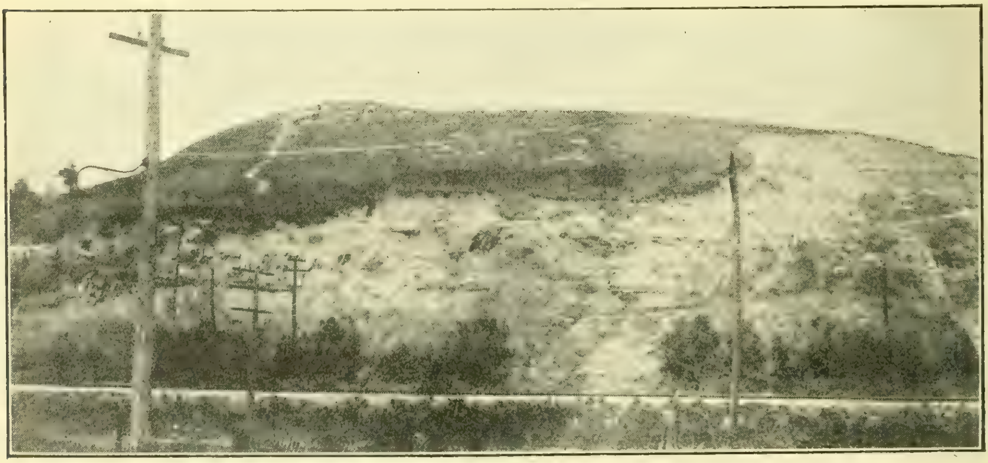


Fig. 1.—Sergeant Bluff, near Sioux City, Ia. This is one of the characteristic hills in western Iowa, on top of which sweet clover is grown.

velous thing is that corn is grown in some of the valleys for thirty years with no fertilizer. More remarkable still is it that the hills have just as rich and productive land as the valleys, but with less moisture, of course. But some ranchmen have discovered that sweet clover will grow on these hills; and where this fact is known beekeeping has jumped ahead by leaps and bounds. The farmer is pleased also because he can grow more cattle and hogs.

As I looked over the territory in and about Sioux City I wished more than once I was a young man, and that I could avail myself of Horace Greeley's advice, squat on some of this land, grow wheat, alfalfa, corn, sweet clover, cattle, and last, but not least, bees and honey. I think I never saw deeper and more productive land than in the vicinity of Sioux City, Ia., except, perhaps, in one other locality and that was Imperial Valley, California, where it is claimed that the land there for soil productiveness is equal to the far-famed land of the Nile Valley of Egypt, where Pharaoh grew corn in anticipation of the seven years' famine.

It is almost impossible to show in a photograph land that spans miles of territory; but Figs. 1 and 2 give views of some of these "knobs," as I call them, where sweet clover seems to thrive so luxuriantly. Fig. 1 is a view near Sioux City, adjoining one of the characteristic knobs where the banks are so steep that no agricultural machinery will ever be able to climb—not even a gasoline-tractor; but man and beast, by walking back and forth, on so-called "cat tracks," can gain the summit. One can scatter the seed of sweet clover, and the beasts and the bees furnish the milk and honey as well as the meat.

Fig. 2 shows a more distant view of that country; and on the right one gets an idea of some of these veritable little mountains. Near the creeks and rivers the clovers thrive luxuriantly, and everywhere white clover is very much in evidence. I found it in the valleys, and I found it on the hills. Altogether I believe Iowa is destined to be one of the greatest states for sweet-clover production, and with the white clover will stand in the front rank. If there is any land in all the United States equal to that offered to the children of Israel it is this middle West.

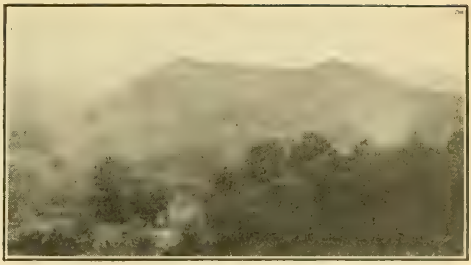


Fig. 2.—A couple of sweet-clover hills near the apiaries of the Western Honey-producers, Sioux City, Ia.

THE WESTERN HONEY PRODUCERS.

This is a rather long introduction to the brief story I am now about to tell of the apiaries of the Western Honey Producers in Sioux City, Ia. Mr. Southworth is the man who looks after the buying and selling of honey; and his partner, Mr. E. G. Brown, is the one who attends to the bees. The Western Honey producers not only produce honey in carlots, but they buy carloads and carloads of it to take care of their bottling trade. Last year, Mr. Brown, with 320 colonies spring count, produced 40,000 pounds of honey and increased to 500. This year he has set his stakes to make an increase up to 1000 colonies and to secure 80,000 pounds. He believes the conditions are fav-

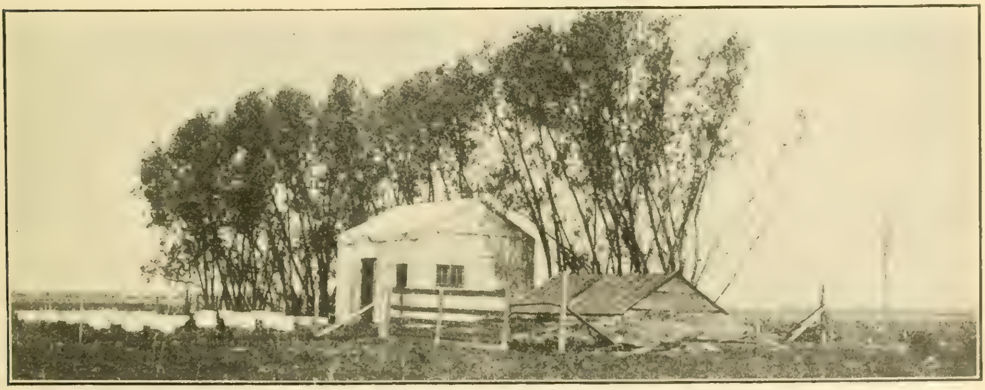


Fig. 3.—The Belfrage apiary, bee-cellar, and extracting-house of the Western Honey-producers.

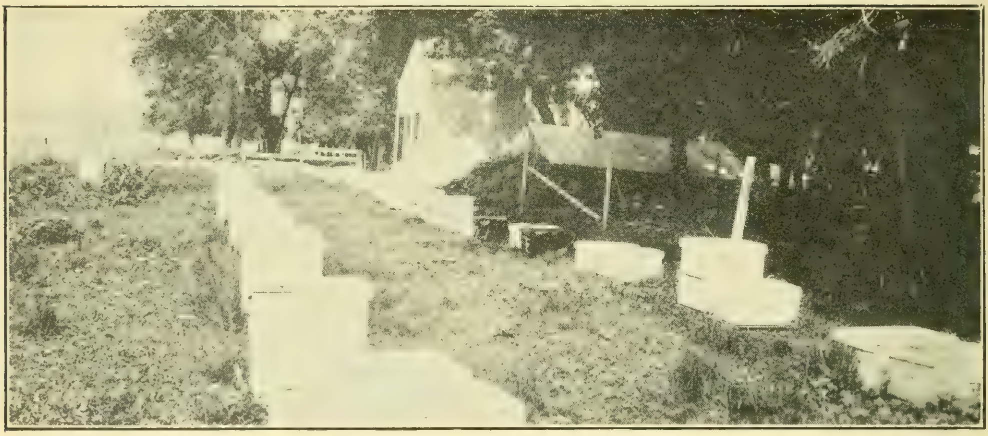


Fig. 4.—The Glen apiary, bee-cellar, and extracting-house of the Western Honey Producers, Sioux City, Ia.

orable from the outlook of white clover and sweet clover in the vicinity of their yards. Fig. 3 shows one of their yards, the Belfrage; Fig. 4 is the Glen yard. In both will be seen their bee-cellars, costing only $25.00, a description of which will be given this fall. In this part of the country the winters are so severely cold that cellars seem to give the better results. Apparently Mr. Brown is having perfect success in wintering. Next October I hope to give some of the secrets of his success.

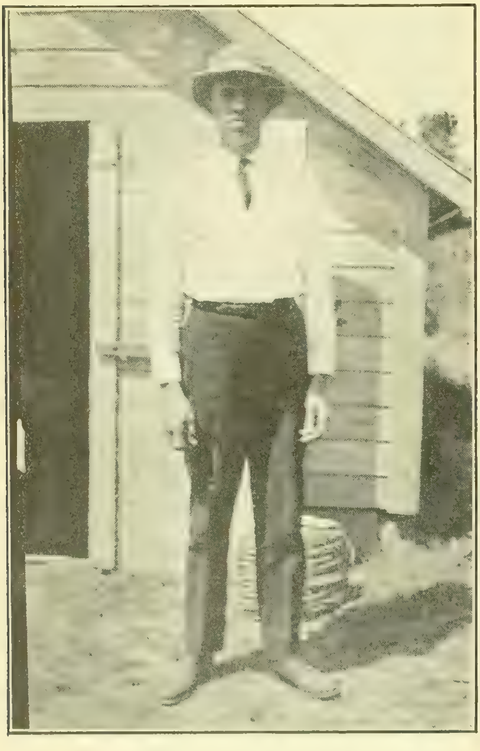


Fig. 5.—E. G. Brown, manager of the Western Honey-producers' apiaries near Sioux City, Ia.

In the meantime I introduce you to Mr. Brown himself in Fig. 5—a man who does a large part of the work himself with the assistance of his partner, Mr. Southworth. He is not only an expert beekeeper but a man who knows how to get practically every ounce of wax out of what most men would consider clean slumgum. That method will likewise be described later.

THE SIOUX CITY FIELD MEET.

On May 23, at the home yard of Mr. Brown, was held the Sioux City field meet. Fig. 6 shows the guests sitting down at dinner; and Fig. 7 a somewhat larger crowd on the lawn with Prof. F. E. Millen, of the Iowa State College, addressing the crowd. Among other addresses was one of Mr. M. G. Beals, of Oto, Ia.; one from R. A. Morgan, of Vermilion, S. D.; B. A. Aldrich, of Smithland, Ia.; and your humble servant.

The field meet was a success from every point of view, especially as shown in Fig. 6.

MR. BROWN AND THE FORD AUTO.

Mr. Brown explained to me that he could not get along with his beework without his Ford automobile. He had one machine that he said was like the boy's jack-knife. It was the same original knife except that it had had six new blades, three or four new springs, and a couple of new handles. Well, this Ford, which he called his old reliable, which he used to take me over the hills to see the sweet clover, the alfalfa, and the corn, had two of the old original wheels, the chassis, and most of the engine. All the rest was new. One feature of the

Ford is that repair parts can be bought at a very moderate figure. When one part plays out when the rest of the machine is good, a moderate sum will buy a new one. In this way the original cost of investment is kept down, and the machine kept in action. The Western Honey Producers use three machines, all Fords.

The other day some one asked me how much Henry Ford paid me for booming his automobile. I answered him by saying that Mr. Ford probably does not know me among the hundreds of thousands of his customers; and even if he did, he would not be likely to tip me off. All I can say is that the Ford is a cheap machine, reliable, and for quick runabout work and light truckwork there is nothing quite its equal for the money. If one plans right, a little Ford with a wagon-box on the rear will handle a series of outyards, and do practically 95 per cent of the hauling.

A LAW-BREAKER WHO TURNED OUT TO BE A PUBLIC BENEFACTOR.

[Our older readers will remember Dr. E. A. Morgan, whom A. I. Root, as long ago as 1876, dubbed "the A B C child who grew so fast;" for he was a reader of the A B C book, and was making wonderful progress. From time to time he gave some account of his successes. At that time he was in Wisconsin, but later on he moved to South Dakota, where he began to distinguish himself again.

He is no longer a "child" in the business, as he has now come to be one of the Gamaliels at whose feet we delight to sit and listen.

The story he is about to tell is right in line with the story that E. R. Root has told just preceding, and he was just beginning to fear that perhaps some might doubt his word as to the possibility of sweet clover in this middle-west country. But here comes Dr. Morgan with the best kind of support.

We hope the reader, even if he does not read anything else, will read the following, for it means millions of tons of honey as against thousands of tons without this erstwhile despised weed now recognized as one of the greatest food plants ever grown.—ED.]

Mr. Root:—Your letter of Feb. 5, asking me to furnish you with an article for publication in GLEANINGS, telling something of the amount of sweet clover in this locality, is at hand.

Fig. 6.—The Sioux City field meet—the best part of the program.

As you well know, I began beekeeping in 1869 at Arcadia, Wis., and wrote you many articles for publication in the years that followed. In 1900 I moved to this state and settled at Vermilion, and at once began beekeeping, but found a scarcity of bee forage—few flowers, bees barely making a living.

I became acquainted with a Mr. Thomas Chantry, of Meckling, S. D., who had raised good crops of honey. He told me he had sown white sweet clover along the roadsides thruout his vicinity, and that it was a great honey-yielder; and that if I would gather some seed and sow it at Vermilion I could soon get a big honey crop.

I did so, and thoroly seeded the railroad right of way and all roadsides for two miles around, and waste places along the Missouri River bottoms which pass here. It grew to an amazing height, and the second year I began to reap a benefit.

The farmers at once became alarmed, and feared it would get into their fields, and wondered what it was and where it came from. They held a meeting and agreed to

Fig. 7.—The field meet on the lawn of E. G. Brown; Prof. F. E. Millen, of the Ames Agricultural College, Iowa, speaking.

cut it and kill it out. All were united, and they did cut it. Many cut it too early, so that it came up again and gave me a good yield of honey. A petition was sent to the legislature asking for a law making it a nuisance, and a noxious weed classed with burdock and snapdragon, and got it passed. A fine of $5.00 was imposed on any man allowing it to grow on roadsides adjoining his land. They fought it hard, and I was obliged to keep silence and see acres of clover in full bloom cut down just when my bees were storing immense quantities of honey from it.

Had it been known who sowed it a mob would have started after me. Still, I gathered the seed and always had my pockets full, scattering it wherever I went, even going out dark nights to sow it. The richness of the soil and the vitality of the plant made it impossible to exterminate it.

In 1910, I think it was, our State Agricultural Station at Brookins, S. D., discovered that sweet clover is a wonderful builder of soil. Sown on poor clay land which would not grow grass in three years it grew heavy crops of wheat. Then it was discovered that stock would eat it. Word went round the farmers' institutes, and on Jan. 3, 1912, one professor gave a lecture here, saying sweet clover was the best friend the farmer had. Several farmers said if he had made that statement five years sooner they would have taken him out and hung him.

Today farmers are all sowing big fields of it, feeding it, filling silos wth it, and are as anxious to raise it as they were at first to destroy it. Our honey yields have increased from a few pounds of surplus per colony to 300 lbs., or near it, every year. It is the mammoth white variety we have here, often growing six and eight feet tall; and, if not crowded, will throw out branches like a tree. It begins blossoming July 1, and continues in blossom three months. If cut in June, before it blossoms, it stools out and blossoms till Oct. 25, or until frozen. It yields honey as soon as it comes in blossom, and continues to yield, let the weather be wet or dry, all seasons. One can see ripe seed and fresh blossoms on the same stalk until hard freezing weather comes on.

We have also the yellow variety which blossoms May 15, 1½ months ahead of the white, and is a great help in putting bees in shape for the big surplus. This variety, however, is a smaller clover, and there is not so much of it grown.

We have fruit-bloom, dandelions, and a little white clover—not much. These do not give a surplus. Then we have a species of mint that gives a surplus right along with sweet clover for about three weeks. There is never any dark honey in Dakota. All our honey is snow-white and of exquisite flavor. The most of the honey is from white sweet clover. One farmer less than a mile from me sowed 400 acres of white sweet clover one year ago, and is going to raise a seed crop this year, so I am making calculations for a big surplus this season. Last season many farmers made big money raising and selling the seed. One field of 40 acres I visited when in blossom stood evenly six feet tall, and so thick that a rabbit could not get into it to hide. DR. E. A. MORGAN.

Vermilion, S. D., Feb. 20.

THE MAXIMUM CROP OF HONEY

Can Best be Secured if Preparations are Begun the Season Before, ana all Colonies Given Young Queens

By Harold Horner

TO produce a maximum crop of honey in 1918 it is necessary to commence getting the colonies in condition this summer. The beginning must be made just after the honey crop has been taken; or, if one raises his own queens, even earlier, say during the honey-flow, as the best queens can be bred at this time and with the least labor and expense, the queens being mated and laying at the time the honey is taken off.

At this time of the season the hives may be four, five, or six stories high with the queen confined to the lower story by means of a queen-excluder. Some say one story is not enough for a queen; but I have not been able to find many queens that will keep an eight-frame body full of eggs and brood (I use eight-frame bodies only) after the main flow is well on, provided these queens have been doing what they should before that time.

After the supers have been taken off, the old queen should be hunted up and killed. This should be done in the morning and a young laying queen introduced just before dark, when the bees will be in the best mood to accept her. The new queen must be a young laying one. Everything depends on this; for if a virgin or a queen-cell is given the chances are nine to one that when the queen goes out to mate the bees will swarm out with her. It is a great mistake to look in the hive under five or six days to see if the queen has been accepted, for, being young, she is easily excited and then the bees kill her.

THE REASON FOR EARLY REQUEENING.

At the latter end of (or just after) a heavy honey-flow, old queens take a rest and almost cease laying for five or six weeks until there is a fairly good flow of honey coming on from some of the later summer flowers — in this locality from heartsease, as it is the first to yield any amount of nectar. A young queen, if introduced, goes to laying at once, and in a week the bees are hustling off to get something to take care of the young brood. They will generally find it, too, even if no flowers appear to be blooming or yielding nectar.

One of Harold Horner's apiaries at the close of the honey flow

At the time the old queen is taken away the combs should be looked over carefully and all that have drone-cells removed, good worker combs being put in their places. Another story of worker combs should also be put on with the queen-excluder above it, as it will take two stories to hold the young queen. Good combs for this purpose may easily be selected from combs recently extracted.

Two to three weeks after the young queens are introduced the colonies should be looked over carefully, and any queens not laying should be killed and good ones introduced. If the queens have been reared right at home, not nearly as many will have to be replaced as in case of queens received by mail. Usually about 40 per cent of the queens received from other breeders are unprolific. I do not believe this is always due to carelessness of the queen-breeder but to injury of the queens shipped after they have commenced laying when they are heavy with eggs.

After determining the prolificness of all queens introduced, there is nothing further to do until the fall flowers, such as asters and goldenrod, commence yielding nectar. After this flow has been on two or three weeks every colony should be looked over to see that the queens are all right and that there are plenty of bees. Colonies not having enough bees to cover six to eight combs, and with plenty of hatching brood, should be united with other weak colonies. The queen should be laying in the upper story, there being two stories left for winter. All surplus bodies and the queen-excluder should be removed, likewise any ventilating-blocks for extra ventilation at the entrance. The propolis should be scraped off the edges of the hive-bodies, floors, and covers, so they will fit closely and leave no opening for drafts of air across the frames.

PREPARATIONS FOR WINTER.

At this time it should be possible to tell how much honey the hive contains for winter. Each colony should have not less than seven or eight combs weighing full five pounds each, and it does no harm if there are more than this. The mistake should not be made of looking over the bees too late and then filling the top story with combs full of honey sealed clear to the bottom-bars. The bees need time to arrange the brood-nest to their liking, and they will not do so well on combs entirely filled and capped over.

As soon as the bees have been found to have plenty of honey the covers are not disturbed again, but are left to be sealed down. Colonies so arranged are in good condition for winter; and with a good prolific queen, plenty of young bees, and more than enough honey, everything is ready for a maximum crop of honey in 1918 provided there is nectar in the flowers.

During the winter the bees go to the upper story where most of the honey should be, and where it is much warmer than in the lower story with its entrance. The cold winds do not blow directly on the bees as in one-story hives. Furthermore, the weather has to be pretty warm for the bees to come out of two-story hives, as they cluster some distance away from the direct sunshine. In single-story hives the sun draws them out while the air away from the hive is so chilly that many fall and never return, thus weakening the colony. I have never used any extra winter protection as yet, but expect to try some sort of winter case in addition to the two stories.

About the last of October or first of November it is well to go over all the hives and reduce the entrances to three inches by one-quarter inch, using a strip nailed over the opening. I use floors made of ⅞-inch lumber with a space under the hives of ⅞ inch also.

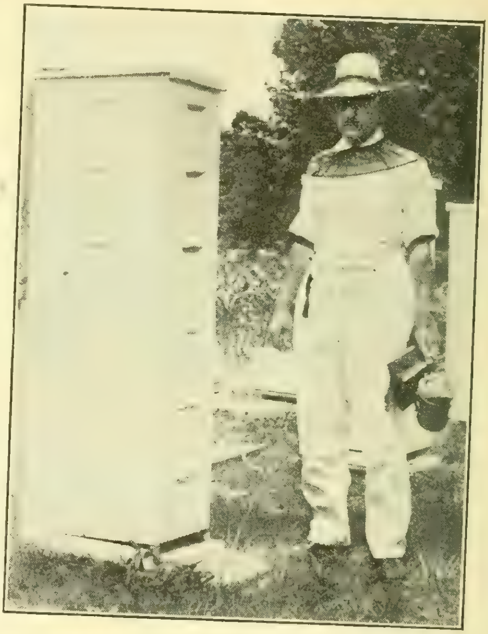
EARLY SPRING WORK.

In the spring, as soon as the weather is warm enough to open the hives, which is usually March 1 to 15 in this locality, it is necessary to go thru the colonies to see if any are queenless. If any are weak it is better to unite them at once, for it does not pay to try to pull a weak colony thru. It is far better to unite, even if a division later on is necessary. At this time, if the winter has not been too severe, three to four combs will be found nearly full of brood with perhaps a little in the middle of two others. If the colony is very strong, and there is plenty of brood, it is well to put a drawn comb, or, better still, one with a pound or so of honey, in the middle of the brood-nest. However, it is never safe to try to spread the brood too much.

In this locality we have plenty of pollen and some honey from soft maple as early as March 10. This starts the bees to breeding very rapidly, especially if they have abundant stores in the hive to keep them going, as there are days when it is too cold and windy for the bees to venture out. Moreover, the maples are quite apt to get frozen when they blossom so early. Of course, there are others later, as they do not all blossom at once.

About the first of April all hives should be examined; and if the upper story is well filled with brood the two brood-chambers should be reversed, the empty ones below put on top, and those with the brood below. The queen can be hurried along with her laying if two combs of unsealed brood are put in the upper story.

Some might ask why it would not be a good plan to let the bees themselves work down into the lower story. This could be done with much less labor; but heat always goes to the top, so if the empty combs are placed there and the sealed brood below it makes it more comfortable for the queen and young larvæ above, and the queen will start laying at once in the upper story, especially if unsealed brood is placed there.



The supers are often stacked up six high.

By April 15 to 25, the fruit-blossoms are out and the bees do a land-office business, provided the weather is not so cold and stormy that they cannot fly. This is the time that plenty of stores left over from the fall before come in handy, for the queen does not have to stop her laying because no honey is coming in.

About three weeks after the two brood-chambers have been reversed they should be examined again; and if the queen is not using both stories the empty one should be put on top as before. There is little more to be done now except to see that the queens are using both stories, or, in some instances, if two are filled a third one besides. Two to three stories should be boiling over with bees ready for clover.

THE HONEY-FLOW.

After white clover has been yielding for a week or ten days (white clover commences about May 10 or 20 in this locality according to the season), after having put on extra supers as necessary the queen should be confined to the lower story. In this lower brood-chamber eight combs are selected from the two or three brood-chambers that are the heaviest with pollen and also that contain the most eggs or the youngest brood. On top of these the queen-excluder should be placed, then a body of drawn comb or full sheets of comb foundation (it is a waste of good time and honey to use less than full sheets of foundation), and finally the body or bodies of the more advanced brood and the honey. All stories above the excluders should have but seven frames and these should be equally spaced.

At this time the empty cells left when the young bees hatched out will be filled at once with honey, and there is always a scramble to get all the combs filled between the two lots of brood. Some might ask about these combs that have brood in, whether they will not be in the way or whether such old combs will not make the honey dark. There is no need to worry, for the bees will all be hatched and out of the way long before the honey is ready to take off. Honey stored in these old black combs is ripened at once, and there is always more of it. I have had two supers of these old combs filled while the bees were filling one super of newly drawn combs. As to the color, I have not been able to distinguish the slightest difference between honey taken from old combs and that taken from new except that the honey from the old combs is invariably better flavored and thicker. Bees never put honey in cells that are dirty.

If the weather becomes warm enough to cause the slightest indication of bees hanging out on the fronts of the hives, two one-inch cubes of wood should be cut for each hive, the lower stories tipped up from the bottom-board, and the blocks placed under the front corners. This gives additional ventilation, and has a tendency to send the honey up into the supers. The hive-stands should be set with pitch enough so that, when the blocks are put under, the hives will be level.

When putting on empty supers it is advisable to remove the full supers down to the queen-excluder and put the empty one on, then on top of it those taken off, putting the heaviest on top. The supers should not be added too fast at the end of the flow. I have always been well repaid for all of the extra heavy work of putting full supers on top. (By the way, this is one of the reasons eight-frame hives are large enough for me, as we often have them tiered up six stories high). The empty supers are nearer for the bees to put the honey in. Moreover, the bees continually traveling over the honey to upper stories, especially if left on to the end of the flow, make the cappings very tough.

My reason for using but seven frames and spacing them equally is that it takes fewer frames and the combs are much thicker, so that when uncapped if the knife goes right down to the frame the uncapping is much easier, much more wax is secured, and the combs are left in better condition. Moreover, there are fewer to handle according to the amount of honey extracted.

Why not extract the combs when full instead of tiering up the supers? The reason is that the honey is richer and heavier when left until the end of the flow. There is nothing worse than honey which is not thoroly ripened. Then I have always noticed if honey is taken away during a honey-flow and empty combs returned the bees become dissatisfied, and it often results in swarming. I rarely have any swarming. The reasons are, first, the young queens; second, the ventilation by blocks under the front ends of the hives; third, keeping the honey on until after the flow is over; fourth, requeening right after the honey-flow with strong young queens. These queens get right down to work and make every one else work too. Bees with nothing to do are like people out of work. They get into mischief, rob a great deal, so they should be kept working as much as possible. A good many of my colonies give over two hundred pounds of surplus honey each.

After the honey is extracted and the combs are empty it is a good time to select all worker combs to be added to the brood-chamber when requeening. The remaining combs can be put eight to a super and piled back on the hives above the excluder, for the bees can care for them better than the beekeeper can.

Mount Holly, N. J.

[Beekeeping is a man's business,—the business of a man who can look into the future and plan for the months to come. One who can see only 24 hours ahead cannot be a successful honey producer.—Ed.]

Sweet clover along the roadsides, alsike clover three feet high, and an unusually fine stand of crimson clover—all in Tennessee. Photographed by J. M. Buchanan.

THE CLOVERS OF TENNESSEE

How Alsike Clover is Replacing the Red for Hay and Pasturage

By J. M. Buchanan

Altho Tennessee has a wide range of honey-producing flora, it is safe to say that the great majority of our marketable honey comes from the clovers, principally white and alsike. On account of its wider distribution, white clover is, perhaps, the most important member of the clover family, from the standpoint of honey production, altho alsike is a close second.

Dr. Phillips, in his late book on practical beekeeping, places the southern limit of the "white-clover belt" at the Ohio River. It is very likely that at the time that was written the doctor had not been thru the famous bluegrass region of Kentucky and Tennessee in clover-blossom time. Wherever bluegrass grows, white clover is found in its highest perfection. Thruout the central and eastern sections of the state with the exception of the mountains and sandstone ridges, white clover grows spontaneously, and furnishes a large quantity of nectar from May 1 to July 1, and sometimes later. The honey from this is generally equal to that produced in the northern states.

For the past ten years alsike clover has been planted by the farmers in ever increasing quantities, for hay and pasturage. While the hay crop is not quite so large as from red clover, the quality is better, and it seems to afford more pasturage. One great advantage alsike has over red clover is the certainty of getting a stand when sown. Perhaps on account of a lack of lime in the soil it has been difficult to get a good stand of red clover. While alsike will grow with less lime than red clover, still it responds favorably to a lime treatment, which seems to increase the growth and also the nectar secretion. On good soil, well limed, I have seen alsike two or three feet high, while many individual stalks would measure over four feet in length.

As compared to white clover in nectar secretion, I would say that an acre of alsike is worth two or three of white clover, even at its best, while the quality of the honey is so much alike that it would require an expert to distinguish the difference. The period of bloom is also much longer than that of white clover, lasting, where pastured, practically all summer. Then when cut for hay the second crop furnishes a good bloom if the season is not unusually dry.

Occasionally we get a crop of honey from red clover; however, this is generally from the second crop, and in dry seasons, when the corolla tubes are not too deep for the bees to reach the nectar.

Crimson clover has been planted extensively as a cover crop and winter pasture for the last few seasons, and is becoming more popular each year. This grows luxuriantly, and furnishes quite a quantity of nectar early in the season, which makes it valuable as a help in building up the colonies in the spring. So far as I have been able to judge, the honey from crimson, unlike that from other members of the clover family, is rather dark in color. However, this may in part be due to an admixture of nectar from other sources, as the period of bloom occurs along with that of fruit-trees and wild flowers.

Along the roadsides in many parts of the state white sweet clover (*Melilotus alba*) is found growing wild, altho as yet this plant has not been extensively cultivated here. This blooms during the late summer, at a time when there is generally a dearth of honey flora. The flavor of sweet-clover honey is so strong that it is not very popular on our markets, many people seeming to think it artificial.

Alfalfa is grown extensively in some sections of Tennessee, but it seems to secrete very little nectar. This is also true of Japan clover, or lespedeza, which is the principal hay crop of the western part of the state.

The young plants of both white and alsike clover made a good growth last fall; and, altho the winter was more than usually severe, the ground was covered with snow during the coldest weather.

Franklin, Tenn.

[The fact that alsike clover is replacing the red in so many localities means much to the beekeepers of America. Think how many locations for bees would be literally transformed if the red clover which is in reach of the bees, were replaced by alsike. Here is good advice: "Do your bit. Help prevent a sugar shortage by planting alsike instead of red clover and secure a better and surer crop besides." Some suggestions made to farmers, these days, are not very practical, from the farmer's own standpoint, but here is one that is worth while. As beekeepers, let us take advantage of a steady movement in the right direction and convincingly preach the gospel of the sowing of alsike by offering to pay a part of the cost of the seed. It is worth while to the farmer and to the beekeeper as well.—Ed.]

WE HAVE NOT DONE IT

Final Chapter in Mating Experiment—May be Another Answer to "Can this be Done?"

By the Editors

SIX months ago we began an experiment to determine whether queens can be mated under cover and mating controlled. We chose to carry this experiment on before the entire audience of our readers, that they might follow it step by step, judge the whole procedure, and suggest if they would.

We undertook this experiment, sparing neither pains nor cost, because of the possibilities for the betterment of beekeeping that we felt might attend success in bringing about control of mating under cover. With such success would come line breeding and all the improvement that must follow the systematic retention of best-quality strains of bees and the elimination of the poor-quality strains. It would end haphazard bee breeding and start the pedigreed bee.

We have failed to accomplish mating under cover in this first experiment and under what we believe to have been the most favorable conditions that have ever surrounded this experiment—at least so far as the enclosure was concerned. We have not predicted success in accomplishing mating under cover at any time during the experiment, altho we had hoped most earnestly for it. We have simply done the best we could in trying to accomplish a great possibility for beekeeping; and we have no excuses to offer, altho we made mistakes that we could avoid another time. For instance, we thought that we could get out-of-season drones reared in the big greenhouse some time in February by building up the original experimental colony to a drone-producing condition, but couldn't. So we were delayed until we could get nuclei containing sealed drone brood from the South, and a cold spring prevented Southern breeders from furnishing us this brood till very late. Again, it proved a mistake to try to use queen-cells started in queenless colonies *en-route* from the South, for the queens so secured proved a sorry lot. Finally, in the first mating test (by unfortunate events for which we and the weatherman were alike responsible) we had few and poor queens altho many drones; and in the second test (told of below), we had enough good queens but only a few drones.

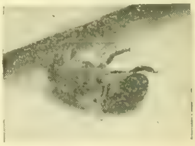
But—we do not seek to prove an "alibi," as the saying is nowadays. We wholly failed to secure the mating that we so much desired, and now proceed to the last brief chapter that tells of the conclusion of this experiment — which we are glad we have made.

As reported in the last number we did not succeed in getting any of the first lot of queens mated—at least, none of them began laying, altho there were plenty of drones—strong, vigorous fellows flying in the greenhouse at the time these first queens were flying. Before we could get another lot of queens ready most of these first drones had disappeared. Four twin nuclei, each with a virgin queen, and plenty of young vigorous drones, were taken the last of May to the building. These four virgins, together with five others in other nuclei, were watched very carefully. These queens were not defective in any way so far as we could see; but within ten days four of them had disappeared entirely, and of the other five not one was laying. It is true that the conditions were not quite as favorable as at the first test, so far as the sources of nectar and the drones were concerned, for the first cucumber-vines had practically stopped blossoming, and the young vines planted later were just beginning to blossom. While there were good strong drones flying, there were not nearly as many of them as during the first test, when we thought the queens were defective.

The glass shutters in the roof of the building are now open a large part of each day, hence further experimenting this year is out of the question; for even if queens were mated we would not be able to tell whether they mated inside the building or out.

As a final word now, we give it as our opinion that, while this experiment is not absolutely conclusive, yet we feel that if mating under cover is ever accomplished the percentage of mating may be so low that the success will be interesting more from a scientific than from a practical standpoint. In other words, while the queens and drones may fly naturally in a great enclosure like the big greenhouse in which this experiment was tried, yet conditions nevertheless are not normal, as they are out of doors, and any possible successful matings will doubtless be limited. Yet, having said this, we are not yet quite prepared to add that "This can't be done."

We may try the experiment again — indeed, we are very likely to try it again.



HE failed us.

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

REGULAR COMBS FOR FORMING NUCLEI.

"I wish to rear some queens for use in my apiary, as I think I have a good breeding queen. Had I better adopt the little nucleus hives queen-breeders use or use the regular-sized combs of my brood-chambers? How shall I form nuclei if I use my brood-combs for that purpose?"

From my standpoint, the best size of frame for the practical beekeeper to use in queen-rearing is the one used in producing honey. This is especially applicable to the one who has been a beekeeper only a short time. For a few seasons, soon after I began beekeeping, I tried raising queens in small hives holding four frames about eight inches square. The failures I met by using these small hives and frames were so numerous that I became disgusted and almost discouraged; but as I was hoping to overcome all difficulties, I kept at it until I learned a better way—using full-sized frames. The bees work more to our profit when the regular-sized frame is used; for if any comb is built by the nuclei it is in just the frames we want it, and always of the size of cells we wish, as these small colonies build only worker comb.

After deciding on full-sized frames I reared quite a few queens the next season for my own use; and I so much enjoyed the bees' work in building new combs and patching up old ones that I could scarcely go into the apiary without taking a peep into some of the nuclei. Where I have combs in which the mice have gnawed holes, or the bees have made holes by cutting out moldy pollen, or combs from which I have cut out little patches of drone comb I always give them to these nuclei when forming them; and as soon as the young queen commences to lay, the bees will commence to build comb and repair these places if honey is coming in from the fields, or if they are fed when no honey is to be obtained. By leaving the young queen with them the length of time required, we have our combs all made over new, nearly or quite as good as those built out on foundation, thus saving the cost of foundation and the work of putting it in the frames. (At times when no queen-rearing is going on such combs can be given to any colony in which a young queen has just commenced to lay; and if her colony is not too strong, and if there is no excessive flow of nectar on at the time, such combs will be repaired in good shape.)

TO PREVENT ROBBING.

With nuclei on small frames and in small hives there is often trouble from robbing; but by using the regular-sized hive, and placing the nucleus on one side of it, with a follower next to the two, three, or four combs used, while the entrance is at the other side, no nucleus large enough to hold a queen to advantage will ever be robbed out. In other words, suppose that the entrance used is the full width of the hive, and that the hive fronts south. Form the nucleus on the east side of the hive, using two combs, one of honey and one of brood. Put the comb of honey next the side of the hive, and the one of brood next, so the comb of honey will be beyond the brood, on which the bees will mostly cluster. Next to these combs put the follower, division-board, or dummy, which should lack, say, five-sixteenths inch of reaching the floor. Now close up all the entrance except one inch in length at the west side of the hive. I have not had a single nucleus robbed out since I discovered this plan forty years ago.

I use this way to prevent robbing of weak colonies in early spring, when robbers are more persistent than at any other time of year. In order to get at the honey, when fixed in this way, the robber has first to pass thru a small entrance into an empty space where it is liable to be seized by one or more sentinels, then travel in the dark thru danger till the follower is reached, underneath which it must go thru scores of sentinels. Should the robber arrive there, no honey will be found, but, instead, the colony, strongly protected and garrisoned by all the warriors, while the treasure the robber covets is still beyond.

Suppose I wish a nucleus in the next hive of the same row as the one described above. In this hive I place the two frames and dummy next the west side of the hive while the entrance is on the east side. The next hive is just the opposite, and the next like the second, and so on in alternation to the end. In this way the young bees do not mix; and in returning from their wedding-flights no queens are lost by entering the wrong hive.

TO MAKE THE BEES STAY.

To form a nucleus from a colony in the home apiary and have the bees stay where you want them, take from any colony which can spare the bees, between sunset and dark, one frame of honey with bees adhering, one frame of as nearly maturing brood as possible with the adhering bees and also the queen, fixing them in a hive as has been described. Leave them thus for four days; then take out the queen, drop her in a spoon of honey, and roll her around till she is smeared. Any new honey which is a little thin will answer. If the honey is thick and old, I thin it with warm water till it is about like new unsealed honey. A broom splint is good for the rolling purpose. Remove the top of the hive from which she was taken four days before and put in two combs to take the place of those used in forming the nucleus, then turn out the honey and queen with it, so she and the honey will run down between two combs. Two days later give the nucleus a ripe queen-cell, and in ten to thirteen days you will have a laying queen in the nucleus, as a rule, when they will be ready to build comb of the worker size of cells if fed, or if a good supply of nectar is coming in from the fields. By taking the *laying* queen with her bees in forming the nucleus, the bees will mostly adhere to the queen if the work is done at nightfall, and will not go back when she is taken away four days later.

Borodino, N. Y. G. M. DOOLITTLE.

* * *

Letters from a Beekeeper's Wife

The Bee Hive, July 1, '17.

Dear Sis:

We hardly have time to breathe these busy days. Rob is up every morning at four o'clock and so am I, and we work until dark. You know we started our new yard by taking twenty-five of the colonies from our home apiary. We have increased now to a hundred colonies, each with a fine, new Italian queen, and altho they were small at first they are building up rapidly. Before the end of the season we hope to have them as strong as our best. Of course we expect no honey when making such increase —which is the difference between modern beekeeping and the old way of letting the bees swarm ad libitum.

Some days Rob goes off at daybreak with our old auto on which he has built a funny-looking truck, piled high with supers. I pack him a substantial lunch for he usually stays in the Randolph yard all day, and at the others not quite so long, looking over the colonies to locate those that are preparing to swarm and to nip that tendency in the bud. Our neighboring beekeepers think he is a crank on this, but we know that it pays. Then too he has extra supers to put on where they are needed. It is back-breaking business, lifting supers all day and bending over hives, but he loves it, and is elated when he comes in at four or five o'clock, hot, hungry, and so sticky and mussed up, but with a truck load of supers filled with beautiful white-clover honey.

Getting up at such an early hour—I can't picture you doing such a thing—gives me time to do all of my own work and look out for swarms in the home yard, and yet have time to lie down for an hour or two in the afternoon. We have dinner ready at five when Rob gets home and the girls wash the dishes while Rob and I go out to the honey-house to extract. We should not be extracting at night when the honey is cool, but starting a new yard has cut down our supply of combs, and right on top of that came a good season. So we have to extract almost every night after Rob comes home to get combs for the next day. I never saw anything like the bee business! There is always something out of joint in our plans, but I know one thing—next year we will not be short of combs. After Rob has his business built up we can adjust ourselves better, and then extracting will come after the rush of the honey-flow.

Out in the honey-house that little gas-engine chug-chugs and turns the fan as well as the extractor, so it is not as hot as it might be, but it is quite warm enough! We both uncap as fast as possible, and Rob puts the frames in and out of the extractor. It is fearfully hard work for him after a heavy day in the apiaries, but I enjoy it. I like the honey smell even tho it is mixed with the odor from the engine, and I like the way the wax falls away from the knife. I can't say that I enjoy the stickiness! I'm not proud but am so stuck up! Clothes, hair, face, hands, even shoes acquire honey, tho I have a special costume, a big oilcloth apron with sleeves that covers me entirely.

We finish the day's work by eight o'clock and go to bed, leaving the children to look after themselves. Billy misses his usual game of checkers with Daddy, and I miss talking over the day with the children, but this rush doesn't last long—that's one comfort.

From the amount of honey we are getting

every day, you would think our bees were gathering up all the nectar in the world, when really it is not a drop in the bucket compared with the amount of nectar there is provided. Nature is surely a lavish housekeeper! She spreads out tons and tons of nectar in her flowers for bees and butterflies and all the other hundreds of insects that feed upon it, and the greater part remains untouched. Rob says one colony of bees alone consumes nearly five hundred pounds of honey a year, and a good colony will give us over and above that in a good season, about a hundred pounds. We get the little end. Just think how much sugar our three hundred colonies—four hundred with our new yard—are picking up from our doorstep, and there must be an enormous quantity left in our fields and meadows in the bottoms of flower-cups.

I ought to be sleeping this minute instead of figuring the amount of sugar at hand which we can't have unless the bees will collect it for us, if I am to be ready for Rob and the gas-engine at half-past five. We seem to be getting a very good crop this year if it holds on as it has begun. The worst will be over when I write you next. When are you and the boys coming out? Shall we look for you next month?

Yours immersed in nectar,
Mary.

How I Permanently Cured European Foul Brood

In the spring of 1914 I bought an apiary of 177 colonies at Reno, Nevada. It was too cold to examine them; but I learned that they had contracted European foul brood and that the whole state was also infected. I was told that it could not be cured permanently—that some experienced beekeepers were already out of business, and others were working their bees to the limit, foreseeing the time they also would be obliged to quit. I had not seen European foul brood, and no one gave me much encouragement in regard to its cure.

However, I remembered the disease raging in New York ten or twelve years ago. So I searched for every available article, written by men of that state. I tried many of the different treatments, but only one appealed to me—that given by Mr. S. D. House, page 330, June 1, 1911. Right here I will say that, if any one will follow Mr. House to the letter, he will cure European foul brood. Dr. Miller's cage treatment doesn't work here, for these bees are entirely black, while his are hybrids. G. H. Rea can come to Nevada and shake the life out of the bees, but they will still be diseased if he doesn't change the stock.

Some good authorities claim there is no resistant stock; but I believe there is, but such strains are few. I tried ten of the best breeders in the United States and saw other beekeepers try as many more; and out of all, I found only two strains that were immune. These I have shaken into hives in which diseased bees had died, yet not a bad cell developed.

Altho some strains of Italians are susceptible to the disease, still the real home of European foul brood is with the black bee itself. Why? Probably because the black race has run wild, inbred, and degenerated, while man has taken charge of the beautiful Italians and has bred them to the highest standards. May 1, 1914, I examined my bees and found 151 colonies were alive and 85 in healthy condition. Of these latter, 35 swarmed during dandelion bloom. June 1 I found all of my colonies were diseased—even the new swarms. In some hives I detected only a few cells; in others all was diseased, or, in plain talk, rotten. When the main honey-flow came, June 12, there were 135 colonies still alive.

MY TREATMENT.

I had already ordered a pure Italian queen for each colony, the queens to arrive at different dates from May until July 1. I started on the worst colonies first, and here is the secret that I discovered: If the swarm is of average size, simply remove all brood, shaking the bees and queen back into the hive; and if the combs remaining in the hive are full of diseased honey, this fact need cause no worry. Refill the empty space with frames containing starters or full sheets. I will guarantee that colony will show no disease in the first brood, a little in the second, and a great deal in the third. I have yet to see the disease showing in the first brood unless the queen is failing. Now comes the next secret. Get that pure Italian queen introduced and laying immediately, or within the twenty-one days when the first brood would develop. I have had as much as twenty-five per cent of diseased brood before the Italian bees began on the job, and it all disappeared in from thirty to sixty days after they took full charge.

If a colony is weak, and also twenty-five to one hundred per cent diseased, I follow the above method—only, instead of sheets of foundation, I give them all the healthy brood they can cover. If the colony is fairly strong, and only ten to fifteen per cent diseased, I do not bother to remove the brood, but just introduce my new queen as soon as possible.

My treatment sounds almost too simple to be practicable, but it has been successful in my apiary.

I find that, where European foul brood exists, one should not attempt to raise queens in a yard of black bees, for hybrid stock does not resist this disease. In the spring of 1915 I had forty diseased colonies, and in every case the bees were hybrids. Either an Italian queen had mated to a black drone or else the Italian queen that I introduced had been killed and a hybrid raised. In 1916 I had two cases out of 350 colonies, and both were blacks that stole a march on me and raised a queen of their own.

The disease is on every side of me and raging thruout the state. Yet, in spite of this fact, my yards are free from it, so I think I have whipped it completely. I have no love for either form of foul brood; but my preference is for the American style of the disease, as its elimination is easier and quicker, and not nearly as expensive.

Reno, Nevada. M. W. HARVEY.

* * *

European Foul Brood and Queen-cells with Dead Tenants

On page 45 of the January number Dr. Miller, referring to what I say on page 1077, to the effect that, so far as lies in our power, we should not let worker-bees have a chance to clean out larvæ diseased with European foul brood, makes this comment: "I risk the guess that, after our tall friend has had a little longer acquaintance with the disease, he'll change his mind."

Look here, Dr. Miller, when you get to a ripe old age you will appreciate the fact that a man often knows a great deal less in his younger days than he then realizes. Years ago, I remember, a bacteriologist said that if microbes were as large as turkeys, and could be as readily detected with the eye, one could understand by what means and to what extent the microbes were transported. We can forgive the average beekeeper for not being able to understand the principles of bacteriology, but I am not going to forgive you if you fail. You have a scientific education; and you know that, when the bees undertake to clean out this dead brood, they must infect their own bodies, other parts of the hive thru which the dead brood is dragged, and quite likely other bees with which they come in contact. Nor is that all. After the dead brood has been dragged outside of the hive there is the danger that the infection may blow into other hives and carry the disease there.

These are the reasons that I prefer to cut out the diseased comb. It is an old saying, that "familiarity breeds contempt." But the wholesome respect that I have for European foul brood will more than balance the expected familiarity.

Altho I do not know that the beekeepers of New York are in the right, still let me tell you in confidence, Dr. Miller, that recently during a somewhat extended tour of their state, which has had such a serious outbreak of this disease, I found that many of the recognized authorities believe that your bees must have had a very mild form of the disease, and that, in many cases, your treatment would not prove a success.

QUEEN-CELLS WITH DEAD TENANTS.

On the same page (45) is a discussion of the value of a queen-cell with a dead tenant; and it appears that some think the bees can be fooled into believing that the cell contains a living rival. Well, what shall I say? You can fool the beekeeper with that kind of thing much more readily than the bees. Who of any extensive experience has not found queen-cells with dead tenants in places where the bees would not have tolerated a living one? R. F. HOLTERMANN.

Brantford, Ont., Can.

* * *

Bees Fly Fourteen Miles for Honey?

On page 374, May GLEANINGS, answering the third question of C. G., Illinois, Mr. E. R. Root says, "Bees have been known to fly even ten miles across a body of water for nectar; but they will not go that far over land."

I have seen the question as to the distance bees will fly in a search for honey broached several times in recent issues of GLEANINGS. I should consider the discussion of the greatest distance academic rather than practical; but still it is a question of interest to beekeepers. It would be of practical value to know how far bees could profitably fly for honey.

FROM THE FIELD OF EXPERIENCE

I believe I was the first to introduce Italian bees into Texas. I imported two queens thru Rev. H. A. King, then of New York city. It was in 1871. Some years later, and, to my almost certain knowledge, before there were any Italian bees in Travis County, I found my Italian bees, a number of them, working on sumac about fourteen miles from my apiary. My small establishment was then two and a half miles east of the capital at Austin. I was eleven or twelve miles west of the capital, across the river and in the mountains at the time. The character of the country east of Austin is totally different from that west. The geological formation is different. A great geological fault exists between the place I occupied and the capital. On my side of the fault all vegetation was dry and parched. In the mountains conditions were much better. The bees had discovered the fact and were taking advantage of it.

Huntsville, Tex. E. P. Stiles.

* * *

A Visit to Charles E. Stewart, of Johnstown, N. Y.

My first meeting with the New York beekeepers and my first visit to their state was at the state convention held at Rochester, in 1882 or 1883. There I met for the first time, L. C. Root, P. H. Elwood, G. M. Doolittle, Mr. N. Betsinger, and other prominent beekeepers. That meeting impressed me as being made up of strong men, of men who knew what they were talking about. Since then it has been my good fortune to attend many such conventions in New York, either as a private individual or as one engaged by the State Department of Agriculture, and I do not hesitate to say that I owe a good deal of apicultural information to the New York State beekeepers.

It is quite well known that the policy of the State Department of Agriculture has been to appoint for inspectors four beekeepers of good standing and of undoubted practical experience. Their practical experience and the information acquired from year to year during their rounds of inspection has made them very valuable men indeed. This fact has often been called to my attention. To illustrate, I may mention that, in speaking of the long experience of these inspectors, Dr. G. F. White said, "So far as I know, these four men have never diagnosed a case of bee disease wrongly." I was also told that not only had they named each case correctly but that, again and again, in consultation and separately, they had determined, before the disease struck a given section of the country, just what inroads would be made on certain apiaries. These decisions were based upon the strain of bees and the skill of the owner. Such men as these may, then, be considered among the best authorities in the world; and having been entertained by one of them, Chas. E. Stewart, a 500-colony beekeeper, I shall endeavor to give some of his ideas on *European foul brood* and also on *fall feeding.*

PREVENTION OF EUROPEAN FOUL BROOD.

Mr. Stewart told me of one of his neighbors who was right in the midst of a section where European foul brood abounded, and still had never been obliged to treat a colony for this disease, altho he did have a few mild cases that were cleaned up by the bees themselves. And yet it seems that this apiary was very poorly managed, that it had twice changed hands, that some of the combs in use were over twenty years old, and that the owner succeeded in producing only one pound of comb honey to three pounds produced by Mr. Stewart in an apiary but one mile distant. Time and again the inspector had gone there expecting to find his services needed, but his expectation was never realized. However, altho this man was not an extra good beekeeper, still his exemption can probably be explained by the fact that he chanced to have a predilection for buying queens wherever he thought there was a good strain.

ITALIAN QUEENS FOR AMERICAN FOUL BROOD.

Notwithstanding Italian queens are such a factor in preventing European foul brood, Mr. Stewart thinks that it would be folly to depend upon them to get rid of American foul brood. Still they might clean up the disease in its first stages, as they have been known to remove the affected larvæ before it reached the gluey stage when it fastens to the side and bottom of the cell.

IMMUNITY.

He believes that the extent to which the disease will affect a certain colony depends upon, first, its vitality as indicated by its ability to winter under strenuous conditions; second, its house-cleaning propensities, including the cleaning-out of the diseased larvæ.

SPREAD OF EUROPEAN FOUL BROOD.

In speaking of what causes the spread of the disease, he said that he frequently finds that, if one colony has the disease badly, the one next to it will be diseased, tho to a smaller extent, and the one next to that will show still less trace of it, until finally colonies are reached that are in a perfectly healthy condition. Apparently this proves that the disease is often spread by the bees of one colony entering the hives next to them. On this point all four of the inspectors seem agreed. Mr. Stewart then told that Geo. W. Haines had some golden Italians that were badly diseased; and during inspection of that vicinity, an apiary of black bees was found four miles distant. These had traces of the disease in nearly every colony; and among these black bees were found some golden Italians that must surely have been Mr. Haines', for there were no other golden Italians in that part of the country. Therefore they must have left Mr. Haines' apiary and made their home in an apiary four miles away.

RESULTS OF THE DISEASE.

Looking back over the last eighteen years of experience with European foul brood—the first two years of which were spent in treating his own apiaries and those of his neighbors—Mr. Stewart says that this disease has brought about much work for the inspectors, but also certain benefits to the beekeepers, as the elimination of the box hives and the weeding-out of the careless and indifferent beekeepers. Also, by the necessary renewal of combs and the introduction of Italian blood, the disease has transformed good beekeepers into still better ones, and has thus increased the yield and quality of honey production.

BUYING BEES IN LOCALITIES HAVING EUROPEAN FOUL BROOD.

In giving a parting word of advice concerning European foul brood, Mr. Stewart said, " Beekeepers should not buy bees from localities where the disease is unknown, but, rather, from places where the disease has already existed."

FALL FEEDING.

Mr. Stewart uses ten-frame Langstroth hives, and plans to supply his bees in the fall with enough honey to last until they can be handled the following spring. Having Italian bees, and producing comb honey, it naturally results that the bees store more honey in the brood-chamber.

The latter part of September, when the bees seem inclined to stop breeding, he feeds back all the unfinished sections, and so stimulates the bees to renewed brood-rearing. On all the colonies that do not have an abundance of stores he places these supers, separating them from the brood-chambers by means of an enamel cloth with a small opening thru which the bees can reach the stores above. To hasten the transfer of stores to the brood-chamber below, the cappings in some of the sections are broken. The rest of the partly filled sections are piled up in the apiary and left with a small entrance so that all the colonies may help themselves (Mr. Stewart mentioned that this sort of thing should be done only in a locality where the bees were free of disease).

In reply to a question he stated that the strong colonies do not take exclusive possession of the unfinished sections, but that even the nuclei secure enough honey to stimulate them and cause them to prosper. In an apiary of one hundred colonies, there is likely to be ten supers of unfinished sections. Since these are robbed but slowly, there never results much excitement, altho each colony is kept fairly active.

No sugar syrup is fed; and so while some buckwheat is secured, still it may happen that there are not enough unfinished sections to give them the desired amount of honey. In this case he equalizes the honey in the brood-chambers. During the autumn of 1916, Mr. Stewart's five hundred colonies were fed about two tons of honey. This was not so much to supply needed stores as to insure added strength for the coming spring.

R. F. HOLTERMANN.

Brantford, Canada.

Sprinkling the Loafers with Honey to Check the Desire to Swarm

Because of the frequent seasons when conditions are right for excessive swarming, the problem of keeping this nuisance down to a profitable working basis is one that almost constantly confronts the beekeepers of this locality.

Since 1903 I have used a simple means of checking swarms. Much, however, depends upon its application at the opportune time. It is quite possible, with certain conditions prevailing, that success may not always follow.

The honey-harvest conditions here may be roughly divided into two classes. In the first, unfortunately rare, the flow of nectar is heavy and continuous. Brood-rearing is often less than normal, and swarming is at

FROM THE FIELD OF EXPERIENCE

its minimum. One such season occurs about once in every five or six years.

In the second type, which is by far the most frequent, the nectar flow is slow, often scanty and interrupted, and there is a consequent tendency on the part of the bees for abnormal brood-rearing. Under such circumstances the volume of emerging brood is usually in excess of its equivalent in honey-laden storage-comb already occupied by the bees. Such a state of affairs almost invariably results in swarming without regard to the surplus room that may be given. To meet this situation it is well to provide by artificial means the element lacking which is disturbing the equilibrium of the colony. The steadily increasing stream of bees must be kept spreading inside, not outside.

After having resorted to the usual means of preventing swarms, and finding that certain colonies are inclined to loaf at the entrances when others are making some show of work, I have tried the following: From the honey-house I get a small pail of thick extracted honey and a large strong kitchen spoon. Thus equipped I visit each colony that shows the least sign of loafing and allow a quantity of the honey to trickle down from the spoon over each bunch of loafers. The amount varies with the size of the cluster—a whole spoonful for a large-sized bunch. Should some of the honey fall or run on the path of the few workers that are still plying between the hive and field no harm results, as these will also become daubed and add to the general stir that soon follows.

The behavior of colonies varies under this treatment according to their individual characteristics. With some the effect is almost instantaneous. The bees at once get to work and the swarm is practically canceled with the first application. In the case of others, the loafers are stubborn and it may be necessary to repeat the treatment in a few hours, with possibly a third application before signs of swarming disappear. As a rule, colonies that are prompt to empty a feeder are more susceptible than those that show the opposite trait. Partly filled sections or pieces of combs containing honey or burr combs may be used, but they must be uncapped or put in a leaking condition to accomplish the desired result.

This manipulation should not be attempted except at the beginning or during the height of the harvest, never as the harvest is waning, nor immediately after a shower. Beginners should not try the plan at all until they are thoroly familiar with conditions that prompt robbing. Colonies having valuable queens should be safeguarded, otherwise the queens may be lost, as colonies so treated are somewhat apt to supersede queens.

Aiken, Md. J. Ford Sempers.

Degenerating Apiaries

A Florida beeman, in a letter just received, says that he has sold his apiary, situated on the St. Johns River, north of here. He asserts that his reasons for selling were two—first, that the price received was good, and the hives were all getting bad!

The latter point makes me want to say something that has been in my system for a long time past. I refer to the jumble and junk condition into which many an apiary is allowed to degenerate.

Not long ago I bought two dozen colonies from a neighbor, about 40 miles away from my home yard. This beekeeper took Gleanings, and had a copy of A B C—in short, was supposed to be up to date.

Imagine, if you can, my surprise, my consternation, when on opening the hives I found that the frames were not all of one pattern. Some were self-spacing, some not, and in the same hive at that. Some had wide top-bars, some narrow; some combs were attached to two or even three frames at one time; some top-bars were so sagged in the middle that they allowed a two-inch space between the top-bar and frames above them. Some of the hives had flat bottoms and tops, where two stories joined; some had the old-fashioned beveled bottoms and tops; and, worst of all, some of the beveled hives were set on the flat-top hives. Can you imagine any worse mess?

I said then, and I still feel, that an equal number of box hives would be no harder proposition. It is sheer carelessness or neglect, or both, to let a yard get into such a condition. A little falling behind now, a little the next time you look over the bees, and, presto! before you are aware you have to realize that your yard is a back number.

A similar letter from another beeman states the matter thus: "I have only six colonies, but all are in old-fashioned box hives. If you will write me, advising me the best method of keeping these bees, I shall be grateful to you." Needless to say,

FROM THE FIELD OF EXPERIENCE

I advised him to get the best hives he could, paint them well, and keep them *up to standard.* Slovenly beekeepers make slovenly hives; and slovenly hives, in a sort of reflex action, result in slovenly beemen. On the other hand, one of the best incentives to the best that is in you is always to have even the looks of things prove an inspiration to do your best. Not least of all is the decided advantage, if ever you wish to sell out a yard. It costs very little to keep things snug and modern as you go along. It becomes a herculean task to readjust, after the yard reaches a point where practically everything needs overhauling. A stitch in time saves nine.

Deland, Fla. E. G. Baldwin.

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Swarm Prevention and Control

Continued from page 351 May number

The beekeeper's object is to prevent swarming, if possible, in order to increase the amount of surplus honey by concentrating the efforts of the bees on storing. Few beekeepers, however, understand how the problem may be solved. It is not my intention here to advise on the whole subject other than to mention some things that must be done if we would prevent swarming.

In this connection it is well to remember that the bee is intent on what it is doing, whether it be swarming, comb-building, or the gathering of pollen or honey. Therefore if we wish to prevent swarming we must give the bees an inducement to follow some other line—one that will divert them from the idea of swarming. It is just for this reason that bait sections are of so much value. They give the bees an inducement to begin operations in the sections; and with the bees intent on this work, the greatest danger of swarming is over.

While, as I have said, it is not the nature of the bee to build comb in the old hive, yet if comb-building can be induced and the colony started in this direction before the necessity for swarming arises, swarming may be controlled. However, where new comb-building is being forced in the old colony, there is always the possibility that new swarming tendencies may arise; for if there is a crowded condition in the hive, or if there is a honey-flow sufficient to induce rapid breeding, but not enough to cause rapid comb-building, then a state of unrest and inactivity will result in preparation to swarm. When this state of enforced inactivity once prevails nothing but swarming will bring the colony back to its normal condition except, perhaps, an abundant comb room in which to store. The time to begin to control swarming is before the conditions develop that induce it. This is why we are able to control swarming when extracted honey is being produced, because it is possible to keep the colonies busy without forcing them into comb-building. When comb honey is being produced, swarming can be controlled only as we are able to overcome the swarming impulse by removing the queen-cells or using other methods that will thwart nature. Many times if we remove queen-cells the bees become so intent in rebuilding them that swarming is neglected.

While reproduction is the object of swarming, it is only after the limit of available comb room has been reached that the bees exercise that function. In this the queen at times plays an important part. The tendency to supersede old queens is ever present, and is stronger in the early spring and summer than at any other time. This is due largely to the fact that the weakness of the old queen is more apparent during the height of the breeding season than at any other time of the year. In instances where there was plenty of room I have often known a colony run for extracted honey to supersede its queen without showing any desire to swarm, even when swarming conditions seemed ideal. But oftentimes queen-cells may be started for the purpose of superseding, then other conditions arise and finally result in the casting of the swarm. This may happen even at a time before the cells are completed, in which case the parent colony probably realizes that the time of eliminating the old queen is also an opportune time to relieve the congested condition of the hive. Yet notwithstanding the old queens may cause swarming, still the swarming impulse is not necessarily relieved by the presence of a young queen; for when conditions become such that nature demands relief, swarming will take place just the same. But the bees will respond more readily to comb-building than when an old queen heads the colony, because there is no necessity for superseding. However, tho supersedure may be a factor in many cases, the primary object of queen-cells at the swarming period must be attributed to reproduction made desirable by the bees having reached the limit of available room. In case of supersedure cells, the object is self-preservation. P. C. Chadwick.

Redlands, Cal.

STRAY STRAWS

Dr. C. C. Miller

I DOUBT there being a spring in the past 50 years with so few days in which bees could fly. I used to think that discouraging, but have come to think it an advantage for colonies that need building up. If the weather is so backward that white clover does not bloom till the middle of June instead of the first, it gives a backward colony that much longer time to get ready for the harvest. "But," you say, "if bees cannot get out to gather, they will not build up." Beg pardon; observation thru many years has brought me to believe that in seasons when bees can fly only once or twice a week they will build up as well as if they could fly every day, *provided they have abundant stores in the hive.* You see a week of bad weather in spring does not stop brood-rearing; and then if a day comes for the bees to fly, they'll keep on for another week. But in a season like this, one must look out for starving colonies at the beginning of the clover-flow. [Your experience is almost an exact duplicate of ours. We believe we have never had so much breeding in our apiaries as we have had this past spring even tho we have had so many bad days, chilly to cold, with rain and even snow, with only occasionally a good day when bees could fly. The bees used up their stores at a tremendous rate so that many of our colonies at this date, June 7, are on the verge of starvation; and we have had some time of it in watching every colony, especially the big ones, at our outyards. Clover is going to come on late but is looking good. Practically all of our colonies will be in fine trim to catch the crop if it comes. This has been a year when we have been able to equalize the strength of colonies by giving the weak ones hatching brood from the strong, and giving to the strong combs of sealed stores from the weak. The plan has worked out well, and practically every colony will be in shape for a crop. The strong colonies bred so heavily that they would have been too strong, and would have swarmed prematurely. As it is, we have taken off the "gilt edge" of the big ones and put "pep" into the laggards.—Ed.]

G. M. Doolittle says, p. 440, that in certain circumstances there will be little difficulty in getting the bees to go into the sections "provided the supers were on the hives a week or so before this rush comes." Now, what good can it do to give the bees a lot of room to keep warm a week or so before they need it for storing? Well, I don't know that I can fully explain the matter; but I know that Doolittle is dead right, and that it's better to have supers on a week too early than a day too late. The old rule (a rule still given by some) was to give supers when bits of white wax were put by the bees on the top-bar and upper part of the comb. That's a good rule not to follow. The crowding that makes bees secrete wax and deposit it where it is not needed is practically certain also to turn their minds toward swarming. They seem to say, "We're too crowded here; we've got to get out of this and go where we'll have more room." The point is that when bees begin to plaster wax promiscuously they're already in the surplus business; and when in default of your having provided surplus room, if they have decided that swarming is the way out, it's too late to get them to change their minds. Possibly there's something in the notion that they should get acquainted with the surplus room a little before they're ready to use it. At any rate it's a safe thing to follow Doolittle and give sections a week or so *before* they are actually needed.

"Produce More Honey to Relieve Sugar Shortage" is the rather startling headline over an article, apparently editorial, in *The Practical Farmer,* p. 198. It starts out by saying: "Honey is better than sugar. It is more easily digested. It can be used in place of sugar or syrup." Isn't it fine to see a thing of that kind in a purely agricultural paper? It will do more good there than in all the bee-papers in the world. [The same slogan—honey instead of sugar—is being sounded in the daily press, thanks to literature sent out by the Department of Agriculture, Washington, D. C. For this we believe we are indebted to the energies of Dr. E. F. Phillips, one of the most active and energetic men in the whole Department of Agriculture.—Ed.]

W. J. Sheppard, *British Bee Journal,* 120, says that if 1⅜-inch spacing instead of 1½ results in more swarming, "the reason would be that the latter spacing permits of freer ventilation between the combs." That's very important if true, and it's possible it may be true. He thinks narrower top-bars without narrower spacing might remedy the matter, for he says "few beekeepers would care to scrap their present outfit to change to the inch and a half spacing." In any case there need be no scrapping of outfit, for one frame less in a hive would allow the larger spacing. But *if* all that's needed is the greater ventilation, that can be obtained without any change. Simply stutter the extracting stories, thus giving ventilation to each, and give ventilation to section-supers by shoving forward the first super, and also give ventilation at top by means of the top-ventilating cover described on page 121 of the latest edition of Fifty Years among the Bees.

Another boost for sweet clover. This time it's "Sweet-clover Silage." *Prairie Farmer,* 440. George Nimmo, of Livingston Co., Ill., has fed sweet-clover silage for several years, and says he likes it better than corn or any other crop for silage. M. F. Baker, of Kankakee Co., Ill., has been using sweet clover and straw for silage, mixing one load of straw to four of clover, and he says: "It can be put into the silo at any time, as the weather conditions do not affect it. You can put up silage when the dew is on or after light showers, and it keeps just the same. . . . I believe sweet-clover silage is fully as good as corn silage and easier to handle, as it is not so bulky. . . The sweet clover was just as sweet and nice this spring as when it was first put in the silo. A good stand of sweet clover will yield six tons to the acre."

I was rash enough to say to Dr. C. D. Cheney, page 357, "Surely, doctor, when you have biscuit and honey you don't eat it with a spoon." I thought that would squelch him. But he comes back at me by saying he was talking about eating *honey*, not biscuits. And then he tells a story of a newly elected Congressman who went to Washington to "look things over" before the session opened. The lobbyists took him in tow and made things pleasant. When he got back home his friends were curious to know what sort of a time he had enjoyed. "Fine! fine! Went everywhere, saw everything, met all the high muck-a-mucks; and such banquets and dinners! Why, I scarcely had my knife out of my mouth while I was away!" And that story, after I had admitted that I ate biscuit and honey *with a knife!* O doctor!

Opening at page 258, I looked a long time at those seven pictures showing how to put frames together, and I said, "You'll take more time getting your machinery ready than it would take to put quite a lot of frames together at all." And yet that's the sort of thing that pays well. Often it pays to spend more time getting ready than it takes to do the work after you are ready; as when you spend two hours getting ready to do a job that you can then do in an hour, provided that without such getting-ready the job would take you four hours. And then with the right sort of appliances you can do so much better a job. Then I took another look at the pictures and thought it would be fun to make frames that way. That scheme of making a hiveful at once is great! [That scheme of nailing frames has been carefully tested out, and experience shows that it saves a lot of time.—Ed.]

Always it has been a mystery to me how it happens that wax-worms may develop in a section sealed up moth-tight immediately upon being taken from the bees. The only answer I ever had was that the moth sneaked in and laid the eggs, until now J. E. Crane, p. 196, says: "When there are moths, bees evidently carry their eggs about the combs on their bodies, and drop them in all sorts of places inside the hive or on the section combs." Which is the right answer? It's hard to believe that a moth would be allowed to get into a super; but if Mr. Crane is right, how can a bee get the eggs on its body? Doesn't the moth always lay its eggs in a crack? Another thing: With blacks wormy sections are common; with Italians, very uncommon. If eggs are carried on the bees, why not on Italians just as much as on blacks? But if the moth lays its eggs in the hive, it's easy to believe that the Italian would be the better at keeping out the moth. I wish I knew the right answer.

Mention is made in *The Country Gentleman* of 5000 acres in sweet clover in Livingston Co., Ill. Pure sweet-clover honey ought not to be impossible there. But is it desirable? White-clover honey with the vanilla flavor given by a little sweet clover is delicious; but would not that flavor be a little too strong in the pure article? [Sweet clover is making rapid headway in the middle West—see this issue, page 512. —Ed.]

The *British Bee Journal* deserves credit for giving a definition for a "ripe" queen-cell—the first I think I've ever seen. It says, p. 116, "A queen-cell is 'ripe' when the bees have cleaned away the wax at the tip, leaving the cocoon exposed." Now, how long before the emergence of the queen does that occur? [Good definition.—Ed.]

June 2 we still have fire in the furnace, and not many days have been warm enough without it. [The same here.—Ed.]

SIFTINGS

J. E. Crane

I DO not now remember a season so late as this in over fifty years. Apple-trees are not yet in bloom, June 1. There were not half a dozen days up to June 1 with sunshine warm enough so the bees could fly freely, and not more than two or three days when the thermometer went up to 70 degrees. On June 4 the bees were bringing in honey as fast from dandelions as they often do from clover, in proportion to the size of colonies. Hurrah! we shall not need to feed sugar syrup this spring. Queens will soon be crowded at this rate.

* * *

"Brood-combs containing much small larvæ should not be handled at a temperature much below 70 degrees," says Mr. P. C. Chadwick, p. 363, May. If we were to follow this rule we should not have done much handling of brood this spring. But does it injure young brood to handle it with care at a low temperature? On the morning of May 28, with the thermometer on the side of the house at 40, I went to the yard, where the temperature was doubtless several degrees lower, and lifted out most of the brood-combs from two hives holding them out for a few seconds, and returning them to the hive. Two days later, with an assistant, I looked over both hives without discovering any harm done to the tender brood. However, I confess that there seems to be something a little incongruous in looking up queens and clipping their wings as we did a few days ago in a temperature so low that overcoats were necessary.

* * *

That "Food page," 454, June, as it seems to me, contains the most sensible advice on the conservation of food that I have seen. One of the best things it contains is that it returns the advice to Uncle Sam, to conserve *its resources*. While everybody is advised to save to the utmost, Uncle Sam is advised to save the hundreds of millions of bushels of grain that is being more than wasted by using in making beer and whisky. "What is sauce for the goose is sauce for the gander."

* * *

I don't know who M. A. O. is, page 425, but he evidently knows what is going on in the "office" as well as in the outside world, and we outsiders enjoy what is going on in the office as well as those in the office enjoy what takes place outside.

* * *

On page 431, June, the editor concludes that the reason the bees gather no surplus from dandelion at Medina is because they have too many bees for the territory. I will venture to guess that "locality" has something to do with it. If the weather is cold, bees will fly but a short distance, and large yards will gather little; but if the days are warm, as June 2 and 4, the number of colonies seems to make little difference. We have in our home yard some 200 colonies at this time, and—well, I wish you could just look at the combs, crammed with honey. Bees began swarming about here this year before apple-trees were in bloom—something I have never known before.

* * *

Page 355, May, John Preston True tells us of his success in keeping bees in an attic. This is practiced to a considerable extent in Massachusetts. A gentleman from the western part of Connecticut told me of his success. Indeed, he reported a larger yield of honey than almost any one in the state. He used the attic of a large warehouse.

* * *

What is said on page 461, June, about fiber containers, is of special interest at this time. May we add our testimony to that of the editor—that, after using such containers for some time, they seem very decidedly promising? A cheap attractive package for extracted honey is something I have been trying to find for a long time.

* * *

That illustration of the results of incomplete pollination on page 439, June, is most illuminating. The same is true of apples. By cutting into small or one-sided apples we shall find that the cause comes from imperfect or incomplete pollination, as can be readily seen by the lack of seeds.

* * *

That story of the Repp boys raising fruit while their neighbors were raising hell is full of human interest, pages 433, '5. How true it is that one person or a very few have to do the thinking and pioneer work in almost every line of effort! and after they succeed the crowd follows.

* * *

Mrs. Allen tells, on page 455, of having to kill a queen because her eggs would not hatch. We killed one a week ago for the same reason. Who can tell us the cause?

Beekeeping as a Side Line

Grace Allen

SIDELINERS everywhere will do well to catch the spirit of earnest investigation and keen observation contained in Mr. Crane's last paragraph, page 453, June. While the point forcibly brought out is that "the best time to study wintering is in the spring," the still broader truth is inferred that the best time to study any problem is before you are finally compelled to make a definite and perhaps quick decision.

Perhaps even more important is the idea of examining conditions with great care and ascertaining their causes. "Why is this?" should be the question the beekeeper constantly asks his bees. This I feel to be fully as true of the sideliner as of the professional; for while there is not so great a financial consideration involved in the success or failure of his apiary, there is usually a great love for the work and a keen enjoyment of it, which should prove a stimulant for the close study that brings about an ever increasing knowledge and skill. Let us keep our bees, not with our hands and hearts only, but with our heads as well.

Louis A. Cameron, Bloomington, Tex., an enthusiastic side-liner who has read GLEANINGS ever since the days of "Rambler."

I certainly interrupted a little family difficulty the other day. There was her ladyship, the queen, walking in state across one of the first combs I looked at; there were sealed queen-cells, with one already hatched, and on the floor a ball of bees.

"I would think you were balling your queen if I didn't know you weren't," I told them as I broke up their party to learn who was the honor guest. It was a young queen, evidently the one just hatched. Not wanting to breed from this mother queen, I killed the young one at once, whereupon the persistent bees proceeded to ball the remains! But why did they let her hatch, I wonder, and then give her this reception?

* * *

When I asked Mr. Louis A. Cameron, of Bloomington, Texas, if I might use his picture, the one with the oranges and the baby orange-tree, since he had none with the bees, he wrote, "The tree and oranges look all right, but how about my homely Scotch mug?" Well, that's not how I classify the nice kindly face of this sideline beekeeper of Texas.

Mr. Cameron says he has been reading GLEANINGS since the days of "Rambler," and that he is a "bee crank," not happy unless he can hear the cheerful hum of the bees. His father was a beekeeper before him. "One of my earliest recollections," he writes, "is of hearing the old conch shell blow, as it said, 'Bees are swarming! Come quick!'" When his father discarded his old box hives he got a new kind with a row of drawers on each side of the brood-chamber. "I forget the name of these hives," he says, "but they should have been called 'Moth-breeders' for there were so many places the bees could not get into." They always had plenty of honey in those days, and his father still had bees when he passed over at the noble age of eighty-eight, "eyes and brain bright and clear to the end."

Mr. Cameron's start was the purchase of eight hives, in Illinois, six of them very large old box hives. He arranged for a beekeeper to transfer the bees for $5.00, then changed his mind and wisely decided to do it himself. With the customary precautions of a beginner he made elaborate preparations for this big event, making a tent for the work, and assembling hammer, cold-chisel, veil, gloves, and smoker, wrapping-cord, etc. The gloves promptly got smeared with honey; the string, once picked up, declined to be dropped; the gloves were thrown away in disgust, and then "I got so interested that I forgot bees could sting till I put my finger on one." It was all great fun at the time; and later, after watching an expert beekeeper do some transferring, he decided he had made a pretty fair job of it too.

When he first went to Texas there was horsemint everywhere, thousands of acres of it, but the honey was too hot to eat. Now it is made from cotton, mostly, with "the balance a Duke's Mixture."

As I have never been bee-hunting, and have always wanted to go, I was particularly interested in a bee-hunt Mr. Cameron took with two friends, two Mexicans, a good dinner, jugs of water, and a dozen watermelons (which is quite my idea of a proper spirit of preparedness). The two agile Mexicans would climb a big live oak, twenty to forty feet, and "chop as unconcerned as tho they were on the ground and it was houseflies buzzing about them."

It isn't much of a bee country around Bloomington, Mr. Cameron says. He has only a few hives now. Swarming is difficult to control, and a large part of the time the Gulf breezes are too strong for the bees to do much. "My main crop," he says, proving himself a true bee-lover in the saying, "is the pleasure I get from them. I love to nail the hives, put in full sheets of foundation, hive the swarms, and watch them housekeeping. I love to go among the bees at night, put my ear to the hive, and listen to that musical hum."

The present times, Mr. Cameron writes sadly, recall vividly the gloomy days of the war between the states, and set old memories stirring of Morgan's raid and Sherman's march to the sea.

* * *

In a great pile of accumulated (and, I regret to say, unacknowledged) letters from beekeepers I came across this today. Need I introduce the writer to the readers of Gleanings?

EAT HONEY.

"The shades of night were coming down,
  When there wandered thru an Iowa town
A man who bore, high in the air,
  A sign that made the people stare:
      Eat Honey.

"Oh stay!" the farmer cried, "and chew
  Some hog 'n hominy 'n Irish stew."
The stranger winked a crafty eye,
  Then smiled and answered, "No, sir. I
      Eat Honey."

About eleven P. M. that night
  They found him sleeping snug and tight.
Some one had added to his sign
  (Some beekeeper with deep design)
      "*Eat Bonney Honey.*"

When it comes to deep designs and the working of them into clever and unusual advertising schemes, we all take off our bee-veils to Dr. Bonney, of Buck Grove, Iowa, to whom I offer thanks for the verses above. He is not responsible for the one below.

With hollyhocks a-bloomin'
  'N roses all aroun'
'N little bees a-hummin'
  With such a lazy soun',
Who wants to write a Sideline
  Or pen a Dixie bee,
Or do a thing but listen
  'N smell 'n look? Not me!

* * *

"My bees never even tried to swarm last summer. Would that be a sign of weakness?" Not necesarily, yet in connection with the fact that they were in bad shape when you got them in March, moths having been allowed to get in (which *is* a sign of weakness), it is probable that they did not build up enough to feel any crowded condition to tempt them to swarm—not that bees never swarm when not crowded, but that they are almost sure to do so when they are. Weak colonies *do* swarm (more's the pity), but strong ones can scarcely be restrained, save by eternal precaution and persistence.

Geo. J. Trostle, of Sibley, Iowa, with a second swarm of three-banded Italians. A picture of Mr. Trostle's apiary in town appears on page 44 of the January number.

OUR FOOD PAGE

Stancy Puerden

A FEW days ago we had the honor of entertaining at dinner three young men who are leaving the offices of The A. I. Root Co. They had just enlisted in the United States Naval Volunteers. They are bright-eyed, energetic, physically perfect specimens of young manhood, just the sort so needed in business, on the farms, and everywhere in our nation for constructive work. And they have become part of a vast, terrible machine of destruction. They have voluntarily given up their opportunities for business advancement, their social life, nearly everything we hold dear, for the present, possibly for years. They may even give up their lives to help bring permanent peace to the world.

We are told 40,000,000 men are engaged in the actual fighting; 20,000,000 more are making munitions of war. Millions have already died on the battle-fields; millions more have been crippled. With all these millions engaged in destruction instead of production, is it any wonder that the world is threatened with famine?

In the May issue I talked of increasing the food supply by gardens. In June I urged the prevention of every bit of waste. This month I am on the same old subject, increasing the food; but my slogan is,

Just the sort so needed in business, on the farms, and everywhere in our nation for constructive work.

CAN THE SURPLUS.

If there is any more disagreeable work than canning in a heated kitchen on a hot, sticky summer day, Stancy Puerden has yet to discover it. I would far rather be out in the hot sun, knocking potato-bugs into a can of kerosene. But this summer, if we get warm, nervous, and tired to the point of exhaustion canning the surplus, let us remember our brave American boys, fighting and suffering to bring about peace, and be glad we have the opportunity to sacrifice ease and comfort in the same cause.

But in canning, as in everything else, by using our brains we can make the work pleasanter and save many hours. I have found it a great help to get the cans ready a day or two in advance. Order fresh rubbers, for you can afford to take no chances with old rubbers this year. If you use the screw cap, see that you have a plentiful supply of good caps. Wash thoroly the jars and caps, partly fill them with water, fit on rubbers and caps and invert them to see that they do not leak. It is much better for your temper than to invert a jar of boiling hot fruit and have a sticky, exasperating stream of juice ooze out on your kitchen table.

When you get to the actual canning, use the modern cold-pack method by all means. It saves time standing over the hot stove; it is accurate, if correctly done, and the food is far finer in flavor and appearance.

AN EASY WAY TO CAN SMALL FRUITS.

Let me tell you first of an easy way to can small fruits and berries. Sterilize jars and covers by putting them in a kettle of cold water, bringing it to a boil and boiling ten minutes. Keep the caps on the jars to which they have been fitted, by screwing them loosely into place before putting into the kettle. Sterilize the rubbers by dipping in boiling water. Use sound, fresh, not overripe fruit; pack it in the jars closely and pour in boiling hot syrup, filling the jars to overflowing. The syrup is made by boiling together sugar and water, or honey and water, and may be of any desired density. Adjust rubbers and screw on the tops loosely; or if you use the spring clamp, adjust the top which holds the glass cap in place, but do not put down the spring. Stand the jars in a deep kettle, pail, or wash-boiler containing boiling water and pour in enough more boiling water to cover the jars completely. The water will not enter them. Cover the kettle tightly; remove it from the range, and go about your way rejoicing. When the water is cold, remove the jars, tighten the caps, and invert to make sure of no leak. If preferred you may can the small fruits as you do the larger ones; but the foregoing method has been thoroly tested, and the product pronounced delicious by all who have sampled it.

CANNING LARGE FRUITS.

For the larger fruits it is advisable to proceed somewhat differently. You may blanch them before peeling if you choose, but it is not essential. Peel and cut up the fruit in convenient pieces and pack in clean scalded jars. The jars do not need the ten-minute sterilization for this method—pour in syrup to overflowing, have the rubbers in place, and adjust the caps loosely as before. This time have a false bottom of coarse wire netting, lattice work, or slats in the kettle or boiler. Place the filled cans on it and cover with boiling water as before; bring the water to a boil, and sterilize the required length of time according to the table furnished by the U. S. Department of Agriculture. Count from the time the water begins to boil. When the time is up, remove the jars, tighten the tops, and invert to be certain they are air-tight. Keep the hot jars out of a draft unless you want to hear the glass crack.

VEGETABLES.

Until recently, in order to can most vegetables successfully it was supposed to be necessary to sterilize them in the jars two or three hours for several days in succession—a process so tedious that most of us hesitated before undertaking it. The new way is to blanch the vegetables and some fruits, and then pack in jars and sterilize the required length of time. Blanching consists in immersing the clean but unpeeled vegetables in boiling water for some minutes, and then plunging them in and out of cold water. This treatment destroys most of the bacteria which cause vegetables to spoil, and obviates the necessity for intermittent sterilization. It also shrinks the vegetables a little, thus permitting you to get more in the cans. After blanching, peel, cut up, and pack in cans, adding about one teaspoon of salt to each quart can; pour in boiling water to overflowing and sterilize according to the table. The following table is for the hot-water-bath canner, such as I have been describing, home-made or commercial. A water-seal or steam-pressure outfit shortens the time of sterilization, but does no better work.

TIME-TABLE FOR CANNING.

Apricots, peaches, rhubarb, blanch 1 to 2 min., sterilize 16 min. Berries and small fruits, do not blanch, sterilize 16 min. Apples and pears, blanch 1½ min., sterilize 20 min. Pineapple, blanch 10 min., sterilize 30 min. Quince, blanch 6 min., sterilize 40 min. Asparagus, Brussels sprouts, cauliflower, beans, lima or string, okra and peas, blanch 5 min., sterilize 120 min. Greens of all sorts, blanch 15 min., sterilize 120 min. Roots and tubers, blanch 6 minutes, sterilize 90 min. Tomatoes, blanch 1 to 3 min., sterilize 22 min. Corn, blanch 5 min., sterilize 180 min. Pumpkin, squash, and cabbage, blanch 5 min., sterilize 90 min.

You will notice vegetables need a much longer period of sterilization than fruits; but as you do not have to prepare a sticky syrup they are really no more work. And if you have that delightful garden I urged you to make, you can put up a can or two of surplus vegetables while getting a meal and hardly miss the time. Vegetables are like fish in one respect. You know the sooner a fish is cooked after being taken from the water, the better. In the same way the sooner a vegetable is cooked or canned after being gathered, the finer it is.

THE CONVENIENCE OF HOME-CANNED FOODS.

Next fall, when you survey your store-room shelves filled with delicious canned fruits and vegetables, your handiwork, a glow of satisfaction will permeate your whole being. When the man of the house telephones half an hour before dinner to know if he may bring home a business friend—of course no considerate husband would bring a guest absolutely without notice—your consent will be both prompt and cordial. Your home-canned vegetables and fruits will round out your dinner menu more acceptably than anything you could buy from a city delicatessen store. And, of course, don't forget a section or jar of honey made by your own bees.

USE HONEY IN YOUR CANNING.

On account of the scarcity of sugar, why not use honey as a substitute for sugar in your canned fruits? The method I gave for canning berries and small fruits is ideal for the use of honey, as there is no prolonged cooking at a high temperature to injure the flavor of the honey. It will also give good results with the second method, there being no danger of scorching when the cooking is done in the can. As honey is a syrup all you need do is to mix it with water, as sweet as preferred, bring it to a boil and pour at once over the fruit in the cans.

Our Neighbors' Fields

E. G. Baldwin

"MY experience has led me to believe that the business of shipping bees in combless packages from the South will be a success, and profitable both to the southern and the northern beekeeper who takes advantage of it under proper conditions and with proper care."—Fay Barber, in *Domestic Beekeeper*, p. 106, March.

* * *

A Timely Word on Southern Honeys—Editorial, *Domestic Beekeeper*, March, p. 125. "There are many sources of honey in the southern states where with intelligent handling and keeping the different kinds of honey separate from the inferior grades, where just as good honey can be produced as in the North." [Greater care, if anything, is needed in the South, in keeping one grade distinct, and the task is sometimes impossible; for one flow often overlaps another, in some localities. But even there, by extracting at the proper time, the bulk of the good can be saved from the poorer kinds of honey. It takes time to learn this.—E. G. B.]

* * *

"It takes about 65 days' breeding for spring stock to reach a point where they are truly ready for the honey-harvest."—E. J. Atchley, in *Western Honeybee*, p. 33, February. [This has been our experience. If we recall aright, the late Mr. Alexander used to claim that 30 days were enough to build up a colony for surplus strength, by his process of feeding daily every evening for that time. That never seemed long enough, and we never could make it pan out as he described it.—E. G. B.]

* * *

"How nice it would be if we could tell ahead just when the honey-flow would start! My records show a variation of over a month in the flow from orange. Now, if we get our colonies big and strong, and it becomes necessary to feed all those bees a month before the honey-flow starts, it is like wintering over again."—L. L. Andrews, in *Western Honeybee*, February, page 35. [Same here. In fact, we are now having just that experience in this locality. It looks as tho we might have to keep it up, too, for some time to come, as the orange here is a failure this spring.—E. G. B.]

* * *

On "Management Before the Main Flow," Floyd Markham, in *Domestic Beekeeper* for March, says a good thing, p. 104: "The best thing to do is to leave them alone; but they (the colonies) must have plenty of stores to push breeding. The best way to provide these stores is in frames of sealed honey. Feeders are a last resort." . . "Colonies at the outyard gave the same average crop from frames of sealed stores given them as colonies at the home yard that were fed a little every night." [Good!—E. G. B.]

* * *

A communication relative to honey-method of queen introducing has come to hand; a correspondent writes suggesting the method as a new one, an innovation, and makes no allusion to former articles by half a dozen different writers that have appeared in GLEANINGS, *American Bee Journal*, etc. I wonder how much valuable space has been taken up in the many bee journals, during the past decade, for instance, by articles that are but a restatement, often not any better, if as good, of former writings. For example, relative to the introducing method alluded to above, those interested are respectfully referred to the 1916 issues of GLEANINGS, pages 525, 800, 801, 840, 845, 1036, 1037; also to the *American Bee Journal* for May, 1917. Brethren, please let us value space and time, and read our journals a bit more carefully, keeping our files, back numbers, and indices, and using them.

Attention ought to be called here, it seems, to that excellent advice of Dr. E. F. Phillips, in his work "Beekeeping," p. 13: "To be a good beekeeper one must read and re-read the books and journals pertaining to the subject." We could also apply what he says on p. 23, relative to inventions, to writings as well. We quote: "There should some day be prepared a book. . . if for no other purpose than to show the ardent inventor. . . the steps that have already been taken and passed by, and to prevent the repeated rediscovery of abandoned apparatus."

* * *

"A light box, on legs twelve or fifteen inches high, about the same size as a brood-chamber, we have found a great convenience. It should have a cloth cover. We use it for carrying combs about in the beeyard, to protect them from robbers." — J. E. Crane, in *Domestic Beekeeper*.

BEGINNERS' LESSONS

H. H. Root

LESSON NO. 6.—THE HONEY HARVEST.

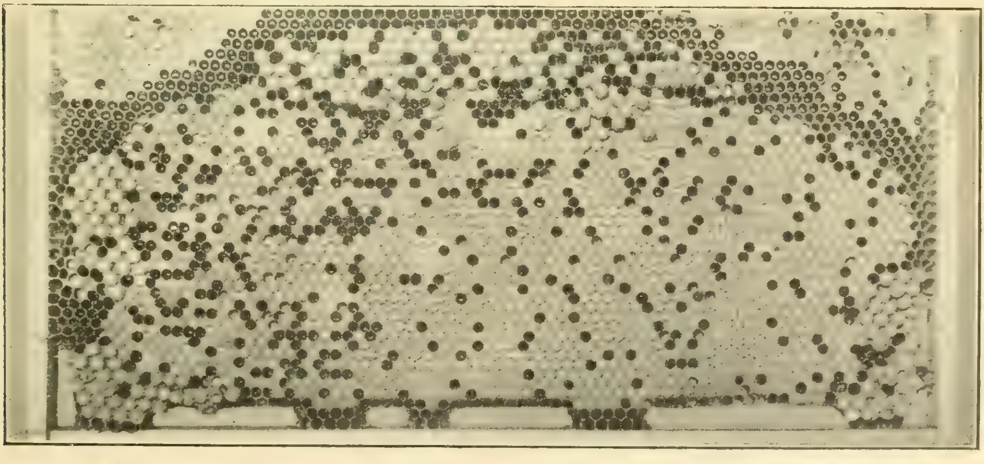
ASSUMING that the preliminary work with the bees has been cared for, as outlined in Lesson No. 5, in the last number, we are now face to face with that very important part of the beekeeper's year, the honey harvest.

For convenience, three factors may be mentioned which have the most to do with the success of the undertaking, here named in the order of their importance — the honey-flow, the queen, and the management.

The honey-flow depends upon locality and the season. Since the average beginner can not change either one, and since it is out of the province of this series of lessons to point out the advantages of certain localities over others situated a few miles distant, we shall pass on to a brief consideration of the second factor, the queen. Few beginners realize how much depends upon the queen. With a locality second to none, an ideal season, and the very best of management, a colony with a queen of poor stock, or with one that is failing, is likely to be a useless consumer rather than a producer—a source of expense rather than of profit. In fact, there is no time when a poor queen shows up so noticeably as at the opening of the honey-flow. If the queen is not vigorous and prolific, and has not been able, therefore, to keep expanding the brood-nest as the warm weather warrants, thus furnishing by the time the main honey-flow commences a hive fairly boiling over with bees, and a brood-nest almost solid with brood in all stages, the bees, when the first rush of the new honey commences, will have a considerable amount of room for the storage of honey in the brood-combs, and invariably will start storing the honey close around the brood, and filling the cells from which the bees hatch, thus "clogging" the brood-combs with honey and limiting the already deficient queen in her room for laying eggs. Once having begun storing in the brood-combs, the bees are very slow about entering the super, and are more likely to swarm because of the overcrowded condition than to stick steadily to their work of bringing in honey. The very best way to avoid such a condition is to see that the colony has a vigorous young queen of good stock; in fact, if there is any doubt about the queen she should be replaced by a new queen some time after the first honey-flow is over and before the fall honey-flow begins. This will not help out in honey production very much the first season, but is a mighty good form of insurance for the next season. There is just as much difference in queens as in hens; and such differences are quite as important, if not more important, because more is at stake.

THE BEST MANAGEMENT.

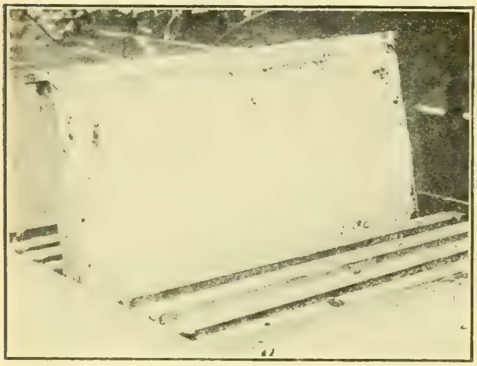
With a good queen, the upper story, soon after being put on as recommended in the last lesson, will become a part of the brood-



It is poor policy to have any queens that are not prolific. When there is as much drone brood as this the combs should be replaced. A good queen ought to have her brood-chamber so packed with brood at the opening of the honey-flow that there will be very little room for honey except in the super.

nest. The bees are thus given plenty of room, and there is every prospect for a strong, vigorous colony when strength is most needed.

As nearly as it is possible to estimate, about a week after the main honey-flow begins, the queen should be hunted up; and if she is not already on one of the brood-combs in the first story she should be placed there and a queen-excluder put between the two stories, so that henceforth no eggs will be laid in any of the combs in the super. Sometimes in an emergency honey may be extracted from combs containing sealed brood, especially when there is a shortage of comb and it becomes absolutely necessary to provide more room. The brood, if it is sealed over, seems to withstand the extractor's whirling very well. Honey intended for the table should never, never be extracted from combs containing unsealed brood.



Combs spaced wide in the supers are bulged and therefore more easily uncapped.

As soon as the queen is confined to the first story by means of the excluder, one comb, or, better, two, should be removed from the super, preferably one at each outside, and the remaining combs spaced an equal distance apart. These combs will, later on, be bulged beyond the edge of the frame. The super will thus hold a little more honey than if the full number of combs had been used with close spacing; but, what is more important, these fat bulged combs may be uncapped in a little over half the time required for uncapping thin combs.

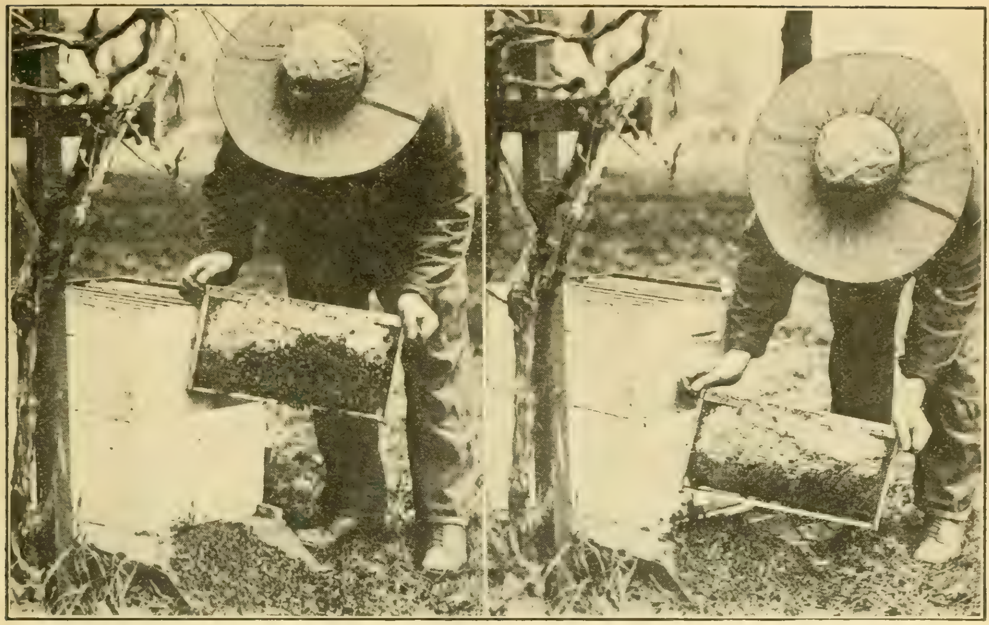
The fact that brood has been reared in these extracting-combs makes them stronger, easier to uncap, and less likely to break in the extractor. Such combs may be used year after year, and they will grow tougher and better all the time.

The beginner should never wait until the first super is entirely filled before putting on the second one, otherwise there is danger of bringing on swarming. When the first super, that is, the second story which had been used for a time for brood-rearing, is a little over half full of honey, it should be set to one side temporarily, the second super put in its place, and then the first partly filled one on top. This second super should contain in the center the two combs taken out of the first super to permit the wider spacing, the rest of the room being taken up by frames containing full sheets of wired foundation, provided no other extra combs are available. Until the foundation is drawn out into combs the frames should be closely spaced.

It does no harm to leave the full supers on the hive, stacking them up three, four, five, or even six high, if necessary and if the honey-flow warrants. The nearly full supers should always be put on top, the empty ones underneath next to the brood-chamber. The longer the honey is on the hive the thicker and richer it becomes. This can not be done in case of comb-honey production in sections; for if the sections were left on very long after being completed, the surface of the cappings would become soiled by reason of the bees passing over it so much.

When it is time to begin extracting, the bees may be trapped out of the super by means of the bee-escape, which, if placed

Sliding a screened bee-escape frame between the brood-chamber and super. In about twenty-four hours practically all the bees will be trapped out of the super, and the honey may be taken off without the bees knowing anything about it.

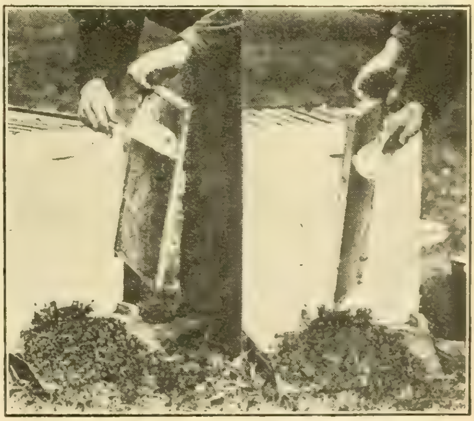


To shake bees from a comb, hold it as shown and give a sharp jerk. Most of the bees will be dislodged at the second or third jerk. It does not pay to try to shake off every bee. The few remaining should be brushed off.

under the super in the afternoon, almost completely frees the combs above from bees by the next day. The honey may then be removed without the bees knowing anything about it—no hard work, no stings, no danger of robbing; in fact, if the honey is not removed from the hives until after the honey-flow has ceased, a beginner ordinarily should not attempt to get the bees off the combs by any other plan; for after a few days of idleness following a good honey-flow, the bees are prowling around, apparently just looking for trouble, and a little exposed honey is like easy money, and the bees are quick to begin to rob. During a honey-dearth following a flow, therefore, a beginner can not be too careful, for it is easier to prevent robbing than to stop it once it gets started.

It is advisable to use the screened or ventilated pattern of escape-board in order that the honey may not have so much of a chance to cool off. Cold honey is much harder to uncap and extract than warm honey.

While the honey-flow is still on there is no danger of robbing; hence it is not difficult to shake and brush the bees from the combs. A little smoke should be blown in at the entrance of the hive, the covers taken off the super, and some vigorous blasts of smoke blown down thru the combs, thus driving the bees out of the way. The combs should be withdrawn from the super and given a sharp shake or two while held over the alighting-board of the hive. Not all of the bees can be dislodged by shaking, and therefore the few remaining should be brushed off, the comb being held as shown in the illustration, and the brush quickly swept over both sides alternately. With the comb held in this position it is not necessary to reverse it when brushing the other side. If the beekeeper has a helper it saves con-

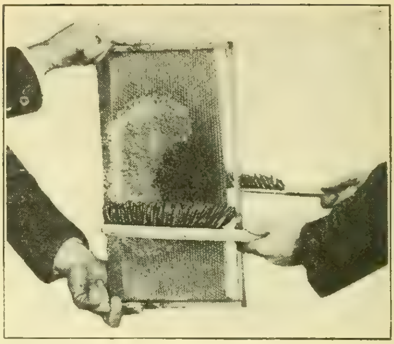


A good way to brush bees from a comb. Both sides may be brushed without changing the position of the comb very much.

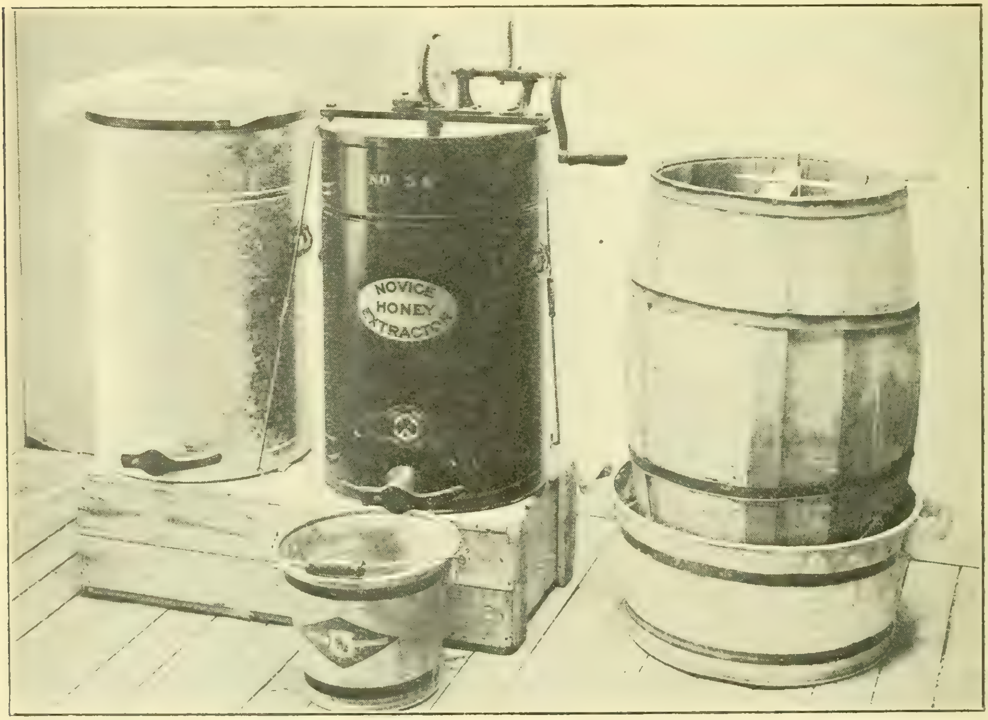
siderable time to let the helper do the brushing with a brush in each hand.

As soon as the combs are freed from bees they should be put in an empty hive body and wheeled to the room where the extracting is done. It is hard to find anything more convenient than a wheelbarrow for carrying heavy combs, especially where the ground is rough and uneven. Even tho the bees may be bringing in honey, it is well to keep the box of combs covered, and, of course, if there is a honey-dearth, the box should not be left uncovered a second longer than is absolutely necessary.

The average beginner had better tier up the extracting-supers until the honey-flow is over, letting the full combs remain on the hives until just before time to extract. That is the easiest plan, and the plan that yields the best honey, for the longer these combs stay on the hives the richer and thicker the honey becomes. There is nothing gained by extracting before the flow is over except in localities where another source begins to yield before the first one is over and it is advisable to keep the two kinds of honey separate. And, the first year or two the beginner may be caught with too few supers and extracting-combs to permit tiering up till the end of the flow. Then it becomes necessary to extract to make room. Lesson 7 will give some of the details of extracting.



A helper with a brush in each hand brushing both sides of a comb at once.

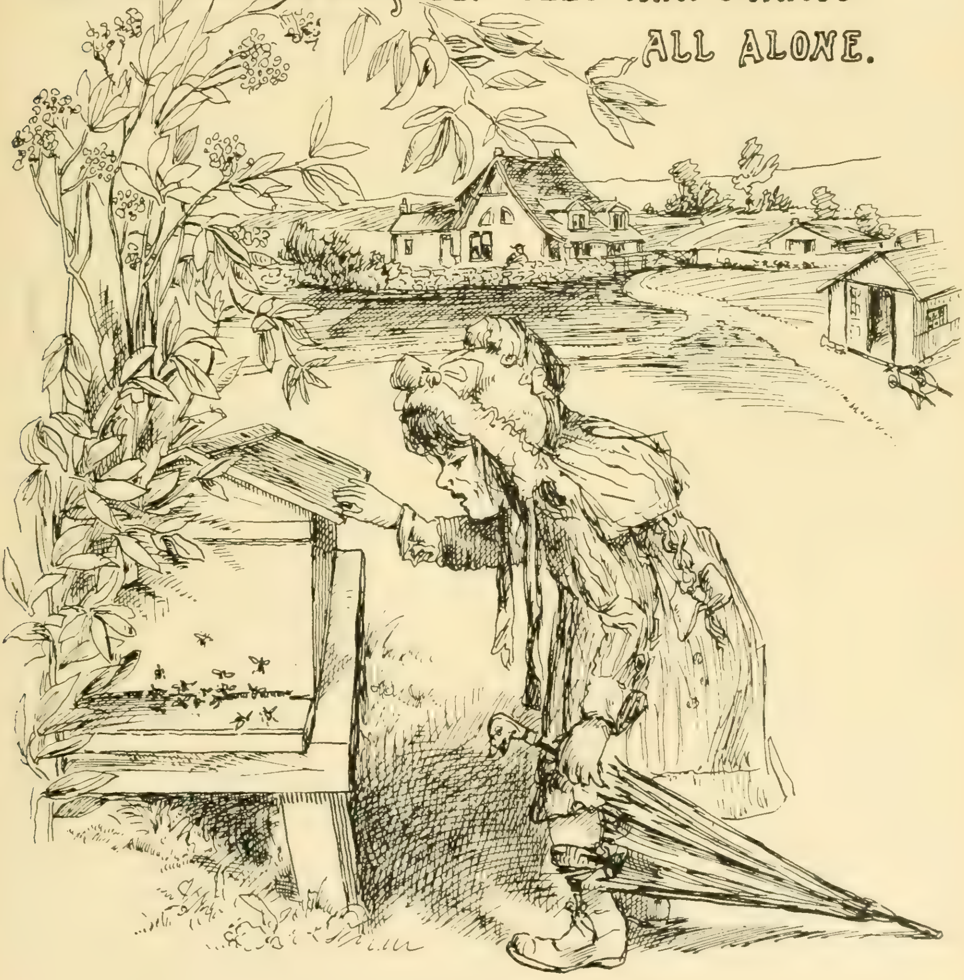


A practical extracting outfit for the beginner. The barrel with both heads knocked out and a coarse screen nailed to the bottom makes a very good uncapping-can when supported over a tub. A leaky barrel is all the better. Instead of a screen a large number of holes may be bored in the bottom and sides; then when one barrel is full it may be replaced by another. A large cheese-cloth bag with a barrel-hoop nailed to the mouth, and supported in a can, makes an efficient strainer that fills all requirements. The honey is not supposed to be drawn off until the straining-can is full. Bits of cappings and other impurities will thus float to the surface instead of gathering in the cloth and filling it up. Of course a good tight barrel will answer just as well as a metal can, provided it has a faucet or gate at the bottom.

Mother Bee NURSERY RHYMES

By M.G.P. (Mother Goose Plagiarized.)

BUZZ, BUZZ, BLACK BEES, HAVE YOU ANY WAX?
YES, SIR, YES, SIR, IN OUR LITTLE SACKS.
SOME FOR THE WORKER CELLS, SOME FOR THE DRONE,
BUT MOST FOR THE QUEEN-CELL THAT STANDS
ALL ALONE.



GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

SUCH a cold, disastrous spring! No rain in April, no sun or warmth in May. And now in June an occasional good day, then rain and several days of chilly cloudy weather, with starting thunderstorms and pouring rains practically every night.

* * *

Clover has come out nicely as a result of recent rains, but of what good is clover bloom when bees can't leave their hives to work it?

* * *

Colonies are in unusually good shape, being heavy in brood. At the last meeting of the Davidson County Association one member reported one colony with thirty combs of brood.

* * *

From Memphis comes the word: "For the first time in five years we are getting a good clover and persimmon flow at Memphis. Locust was ruined. Tupelo had started wonderfully, when along came some ice, and in a few days the scale hive fell off 15 lbs. and lost for three weeks."

* * *

"I shall be satisfied with half a crop," one big beekeeper said recently. "The prettiest prospects I ever saw spoiled," sighed another. "The marketing problem," one writes, "threatens to resolve itself into a question, not of where and how we shall dispose of our honey, but of where and how we shall get sugar to feed our bees."

* * *

As to honey prospects, the season has played seesaw with us. First we were on the very pinnacle of high hopes for that always anticipated "bumper crop" "Mary" refers to in her last letter. Then down we came, hard, with an outlook of complete failure. Now it looks as tho we might finally settle somewhere between.

* * *

These are busy, busy days for us all, in all parts of the country. Many are trying to do extra work because of the serious conditions of the time. With earnest enthsiasm the beefolk here mean to do their share; but unless the present prospects improve materially, their most effective work this season will have to be thru other lines than honey production.

* * *

If the "proof of the pudding is in the eating" (and isn't it?), the wisdom of Dr. Millers's slogan "Breed from the best" would seem to be established. A gradual increase thru the years to three times the former average production is pretty convincing. I move that slogan be officially adopted. "Eat honey," "Keep more bees," and "Breed from the best."

* * *

"A misdemeanor to keep bees in a box," and a "penalty of from $5.00 to $25.00 for each offense"! Well, Michigan *is* progressive! I venture that the reading of that item, page 460, made Mr. C. E. Bartholomew heave a sigh and wish some one would or could put such a law thru in Tennessee. He is doing a lot himself, tho, to raise the standard to the point where some such demand might be made powerful enough to be granted.

* * *

SOME RESULTS AT COUNTY MEETINGS.

County organization goes on merrily in Tennessee. The Williamson County Association reaped the first practical benefit by purchasing several thousand honey-buckets in one order, being thus able to get a slightly better price. Moreover, as I understand, they actually got the buckets, which seems to be something of a feat these days.

* * *

At the last Davidson County meeting, Dr. Ward, whose reappointment to the state inspectorship has just been announced, gave a particularly able and instructive talk on the two foul-brood diseases, telling clearly and specifically how to identify each and how to treat each.

* * *

Speaking of disease, a friend has recently sent me a clipping relating that some one once wrote a certain country editor asking how to treat sick bees. "This is outside my experience," the editor wrote in reply; "but personally I always treat all bees, sick or well, with respect."

* * *

"Henry," Mr. Allen asked the negro porter down at the publishing house on June 5, "have you registered yet?"

"No, suh, I ain't yit, but I'se gwine to."

"How old are you, Henry?"

"I'se 'bout twenty-two," Henry deliberated, "er twenty-three."

"Why, don't you *know* how old you are?" Mr. Allen expostulated, to draw him out.

"No, suh, not rightly; 'n Pappy he don' know neither. I done wrote Mammy—she's up in Louisville, cookin'. Mammy she cain't read nor write, but somebuddy done the writin' fer huh, an' she say she don' jes know huhself how old I is; but she know my birthday's in July, kase she remember when I wuz bohn hit wuz blackberry time, an' there wuz honey in the gums."

* * *

BIRDS THAT WERE NOT INVITED BACK.

Mr. Allen says the weatherman, the bugs, the cats, and even the birds are in league with the enemy. (Think of us Americans talking about "the enemy"!) The weatherman has nearly ruined the honey crop and has utterly demoralized the newly recruited and largely untrained "Army of the Furrows;" cutworms, potato-bugs, and their allies have overwhelmed and devastated many a promising garden; cats have crossed the boundaries and thinned the peaceful ranks of young chickens; while the birds have been conducting air raids in the apiary, with many a fatality resulting among the bees.

It was the poor little mutilated remains that first betrayed these unsuspected attacks. One morning I discovered on the top of hive after hive bits of dead bees—never the whole bee. There were heads and abdomens with wings and legs galore, but never once a thorax. I brushed them off clean, and looked again after supper. There they were again. Again I brushed them off, but the next morning found others. We started watching. For several days we saw one bird, a colorless sort of specimen, with a yellowish breast, hanging around the beeyard, sometimes perched on top of the hives and then darting out and down toward the entrance, evidently catching a homecoming bee and returning to the hive-top to eat it. After several days we saw another early one morning—a beautiful bright-red bird. Then we knew the one first seen was the female; indeed, she soon appeared and joined in the sport. The brilliant and dashing newcomer made a spirited attack; he not only darted and caught and slaughtered and ate, but, as not many bees were flying so early, he finally dropped to an alighting-board where he stood helping himself to one or two bees within easy reach, and at last quietly poked his head right into the entrance! How I wanted that picture! But it lasted only a minute; and, tho he came back several other times, we never got another chance at that particularly guilty attitude. The marauder seems to have registered in Reed's Bird Guide as the summer tanager and wife, or Mr. and Mrs. Piranga Rubra. As they were in our yard for only about two weeks, I judge they were merely visiting tourists. In spite of their great beauty they received no invitation to stay. "Handsome is as handsome does."

FLORIDA SUNSHINE

E. G. Baldwin, Deland, Fla.

Already communications are coming in from the large dealers in honey, and honey is in demand, in big letters. We would advise beemen of the state not to sell too early nor too low. Most of them are apt to be "jewed down" by the wholesalers, who take advantage of the fact that we fall under the class "Southern Honey;" and as that has always had to take a lower price in past years, beemen have not been prompt generally over the state to awake to a realization that "honey is honey" this year, and stiffen in their demands. The latest authorities say that nobody can tell now what the crop of 1917 will be, but advise beemen to gather and save all the available nectar possible, and ask a good price for their honey in the bargain. All of this is good and timely advice.

* * *

We wish to repeat a dictum of Dr. Phillips here; it is worthy of world-wide promulgation. He writes:

"The present emergency offers a great opportunity to the beekeeper, not only to increase his business so as to make it more profitable, but especially to provide a valuable food product for the nation."

* * *

Reports the past month from interior sections of the state indicate that many bees have died from starvation. It is just as we predicted. Many were short of stores at opening of orange-bloom period, and the cold weather killed that source of honey; consequently the usual replenishing of hives was lacking, and loss resulted where proper attention was not given to the bees. The "honey-makers are money-makers," where properly managed; but letting them starve is only killing the goose that lays the golden egg.

* * *

Just to hand comes the timely bulletin from the Co-operative Extension work in

Agriculture and Home Economics, from the U. S. Dept. of Agriculture, and State Agricultural Colleges co-operating, approved by Bradford Knapp, Chief, Office of Extension Work in the South. The appeal to county agents, by our own Dr. Phillips, Federal Apiculturist, is to the point, stirring and timely. Write for it, all beemen, if you have it not already, and then act on the suggestions given. Florida, especially, needs an awakening, for we are further behindhand in all extension work and state inspection, etc., than probably any other of our sister states. More efficiency, more wise economy, more foresight, this is what we need, what we must have.

* * *

CLIPPING QUEEN'S WINGS WHILE SHE IS ON THE COMB.

Mr. F. M. Perry, of Bradentown, Fla., writes: "The best and surest way is to clip the queens right on the combs, not touching them with your hands. I can clip her this way while another man is catching her or trying to catch her." We suppose that practice is everything. Our efforts to clip while a queen was running loose have not been successful, either from point of time saved or efficiency. Once we nearly lopped a queen's head off, and once did remove a leg as neatly as you please, destroying a valuable queen. Our practice, however, has made us dextrous in catching queens, and probably every other beeman who practices clipping regularly becomes as dextrous as any one else. It does not take long to clip the wing. The time is usually spent in finding the lady. Sometimes she is most exasperatingly coy and retiring. Our correspondent's remark reminds us of the reply a good housewife made to a newspaper request for information as to the best way to kill cockroaches. She answered the notice by the following: "The best way I find is to place them between the leaves of a large book, and close the book violently and suddenly. Kills them every time. Easy enough to kill them. Trouble is in catching them." See the point, friend Perry?

* * *

FIRST AID.

Dr. E. F. Phillips is issuing bulletins and press notices to beekeepers of different states, by states, as rapidly as possible. The individual states are also taking affairs in their own hands, and doing "their bit." Mr. Wilmon Newell, of the Crop Pest Commission, Gainesville, Fla., has issued a press notice offering his services to beekeepers of Florida during this time of strain and stress, as well as time of grand opportunity. The federal office, Washingon, has not yet got to Florida but will as soon as possible, Dr. Phillips assures me. Every beekeeper can do his share toward the war, the country, and his state by putting and keeping his apiaries in very best possible shape, and working them for all they are worth, this year and the next, and then next. By that time it may have become a habit, and a good one too. We can not have too much efficiency.

* * *

THE DIFFERENCE IN LOCATIONS.

This year illustrates, as never before, the decided difference in value of locations in Florida. Inland the bees have not gathered enough honey, generally speaking, to supply their brood-rearing needs since the close of the fall flowers last autumn. Many colonies, in apiaries not well kept, have starved, and many more, right now,* need attention. Along the river courses, however, and near hammock lands of the coasts, bees have done better. And right now they are storing some surplus—gallberry, palmetto, etc., being the chief sources so far. Many beemen are moving their bees to such more favored locations. We advise prospective beemen to choose always sites bordering some swamp, hammock, or river course—the more the better. Orange locations will probably not be back into normal again for honey for three years or more, north of the middle of Florida. Further south a year or two may repair the loss that was occasioned by the freeze in February. DeLand is about the worst place possible for an apiary at this particular time.

* * *

THE CONDITION OF THE HONEY-PLANTS.

Reports come to us of bees humming briskly on the basswood in the vicinity of Sanford, near the heavy hammock lands of the river. They are also doing something on it over in the East Coast section. If any one doubts it, let him visit those sections at this writing (May 20), and he will be convinced. We have the linden all right; but it is only favored spots that have enough to make a showing in supers. Friend Baldwin, of Sanford, writes: "Clute is going to extract his honey now on the hives as far as justifiable, in order to make room for basswood nectar. If he gets any basswood honey it will be the first new honey this season."

The cabbage palmetto is already showing the long whip-like shoots of bud-stems that appear long before they blossom out into the plume-like racemes, creamy white. They are appearing rather earlier and more profusely than usual. Here's hoping for a good flow from it when it does bloom. We need it. Saw palmetto does not appear to be yielding overly well thus far. It has been too dry up to the present time, and buds are blighting in many places. We are glad to note that the mangrove on the west coast, below Tampa, is also showing buds, not being killed by the cold wave in February. Florida may have a crop of honey yet.

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* Most of the items on this page were written for the June issue, but reached us too late for insertion in that number.—Ed.

The partridge pea (*Cassia chamaecrista*) is showing up well, and in July it ought to be yielding nectar. While the honey is very dark-red, and strong in flavor, this year anything that is honey will be welcome. It will cut down the sugar bill, or will bring a good price with the baking trade. Let us keep our bees strong ready to take advantage of any sudden or unexpected flow. Honey is honey this year.

CROP PROSPECTS.

The outlook for Florida is not as rosy as it might be, but it is still too early to state definitely. A fair crop of saw-palmetto honey has been taken in the middle and southern parts of Florida, and bees are building up and beginning to store some surplus, even in the inland portions. On the river and coastal lands bees are storing well now, from gallberry and palmetto, in the middle and northern parts of the state. But with orange cut out, the mangrove somewhat hurt, and the drouth that is rather trying just now, the outlook is none too reassuring. However, brothers, beemen, fellow-citizens, let us keep our dish right side up, and be ready for any blessing that comes our way.

* * *

A slight touch of foul brood (American) has made its appearance on the East Coast. Prompt measures have been started to stamp it out. Reports later.

IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

I HAVE just succeeded in completing an electric imbedder by the use of the family toaster as a reducing transformer. It was so easily and quickly made that I was surprised by my success. Three to five seconds are sufficient to melt the wires in.

* * *

I use a 3/8-inch entrance across the front of my hives, and find that a piece of redwood shake makes a good entrance-guard. Break it any length you choose and slip it into the part you wish closed, and that is all there is to it.

* * *

Dr. Miller says, page 189, March, "every laying queen ends her career by being superseded by the bees." I wish that were true in all events; but some of my queens have a habit of playing out during the winter when there is no chance of being superseded.

* * *

Mr. Porter, of Fresno, in describing the texture of granulated bluecurl honey, says the grain is very fine. I find it quite the opposite here, as it becomes coarse, and so hard in the combs that the bees often remove it from the cells and out of the hive without making use of it.

* * *

I have abandoned my record-book of colonies as being too much trouble and too great a time-consumer. A leadpencil for records on the hive answers very well for history, while a few small stones on the lids show the immediate needs of the colony. If there is an exceptionally fine colony it will not be forgotten.

* * *

I have always been opposed to the Hoffman frame, but am now convinced that its advantages far offset its disadvantages, and hereafter I expect to buy no other make. The advantage of always being ready to move is in itself one of the strongest points; and the self-spacing, which of necessity means uniform spacing, is a very desirable feature.

* * *

It is poor economy to spend valuable time and much feed trying to nurse a weak colony to a prosperous condition. It always reminds me of the Irishman who purchased a pig from his neighbor. The neighbor, after a few weeks, asked the Irishman how the pig was doing. "Well," said the Irishman, "he is the greatest glutton I ever saw. He drank a whole pail of swill; and when I put him in the pail he did not half fill it up."

* * *

My bee-ranch neighbor called to me as I was driving past his house to see if I could tell him what my bees were doing in his chicken-yard. I went over, and was not long in discovering they were gathering up the dry mash he had provided for his chickens and making away with it. This clearly showed the scarcity of pollen during January, and indicated that pollen substitutes might be of value at times even in California.

* * *

The most ideal condition for a favorable honey season and brood-rearing is not a continuation of warm open days when the bees can fly at will. During such a season the flowers and honey-bearing plants develop far in advance of the bees. The ideal season is one where there is plenty of pollen and a little honey available whenever the bees can get out, but sufficient bad weather to keep the honey-plants from developing faster than the bees. If the bees can get out to pollen and honey at intervals sufficient to keep up brood-rearing, and at a time when the honey-plants are held back while the breeding is in progress, it is an ideal condition.

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

It is June 5 and we are still waiting and hoping for summer weather. We have had cool windy weather continuously almost every day this spring, and as a result vegetation is fully two weeks behind the average seasons. One thing to be thankful for is that there have been practically no frosts for some weeks past, so everything should be all right if the weather once turns warm. The clover is late, and looking none too well in this part of the province, and will likely be short in growth, no matter what the weather is like from now on. The late spring should be favorable for basswood where there are any of these trees left; and since the buds are barely showing at date of writing they will in all likelihood escape frosts. Quite often a June frost kills the basswood buds, as was the case a year or so ago here in Ontario.

The rainfall has been light here in York Co., but nothing has suffered from drouth yet. A nice rain falling today will help a lot. In some of the western counties of the province there has been too much rain—almost as much as last year, one report says. This will undoubtedly mean better clover prospects for western Ontario than for the eastern and central counties, as a wet May generally means a good growth of alsike.

Fruit-trees are just starting to bloom—the latest by all odds of any season since we have kept bees. Cherries, plums, pears, and some early varieties of apples show a fair lot of bloom; but there is almost a total dearth of blossoms on all late varieties of apples. Secretary Hodgetts, of the Fruit-growers, says that reports indicate this condition nearly all over the province, and that a *very light* crop of winter apples is in sight at best. Last year's apple crop was very short, not on account of lack of bloom, but because of heavy dropping late in the season, caused by excessively wet weather at first, followed by a long period of drouth. While we regret the failure of the apple crop, nevertheless this is a factor to take into consideration when the demand for honey is under discussion, as apples are one of the staples in almost every household. Experience has taught us that when the material for apple sauce is abundant there is never quite as heavy and continued demand for honey as when the apple crop is light.

* * *

The advice given to the combless-package men on page 430, June, is good so far as it goes; but so far as our experience teaches here in Ontario, the most vital point of all is not mentioned. *Put enough food* in the cages. Different lots have come into Ontario this spring with the bees starving on arrival, even when there had been no delay in transit. It is hard to explain the differences in conditions, sometimes. One lot came from the south, and the food in the tins was hardly touched. Another lot came from the same man at the same place, and the bees were on the road but 12 hours longer than the first lot, and yet the food was all gone. *Put lots of food* in the cages.

* * *

In the May issue we mentioned that a friend had called on us with samples of paper containers for honey. We also stated that we had no information as to prices, etc. Surely that was bad business on our part, but it again proved that GLEANINGS is a good advertising medium. Letter after letter has come asking for more information, and I have had to answer in each case that no more information was available. I have heard nothing of the matter since. Whether the prices were not right to suit the agent I cannot tell, but he has not called since. One thing sure, we shall give no future "advance notices" in Gleanings unless sure of being able to deliver the goods. We don't blame people for writing for information, and we don't positively dislike writing replies, but it is even possible to get too much of a good thing.

CAN EUROPEAN FOUL BROOD BE QUARANTINED?

On page 473, June issue, C. F. Bender says that he has entirely eradicated European foul brood from his vicinity by using the Alexander treatment in conjunction with a plan of his own—moving infected colonies as fast as discovered to a quarantine yard not nearer than two miles from the nearest bees and then treating them at once. He would have some difficulty in using the latter plan if he lived in many sections of Ontario. Certainly we could find no place near us that had no bees within two miles of it. European foul brood is rapidly spreading in Ontario, and it looks as tho a good many of us in the near future will have more experimental knowledge of this disease than in the past. That we can all be as successful as Mr. Bender in combating this plague is my earnest wish.

WHAT CONSTITUTES A FAIR PRICE FOR HONEY?

From what evidence it is possible to obtain, it looks as tho the '16 crop of honey in Ontario is about all gone. As stated in the last lot of "Notes," some firms are trying to buy the new crop in advance. I have heard of no sales being made, and as a rule the beekeepers are not keen for taking a chance when there is so much uncertainty in the air. Almost every letter reaching me speaks of the *necessity* of getting a higher price for honey than in the past, and I believe that the great majority only want a *fair* figure for their produce. What constitutes a *fair* price is, of course, a debatable subject, especially if we consider the price of some of the food staples at present. Personally, I think there should be an increase over last year's figures; but I do not think it would be wise to try to figure on such advances as have been made in bread, pork, etc. So long as the different grades of syrup are on the market at a low price as compared with honey, there is no use of unduly inflating the price of the latter; for while certain classes would have the honey at any price, the great mass of the people are forced to consider their pocketbooks, even if that does mean discrimination against their stomachs sometimes.

CANS AND CANS AND CANS.

Being told that future delivery and future prices were uncertain factors in the matter of getting honey-tins, we gave our order about six weeks ago for a few hundred tens and fives as well as some sixties. We expected delivery some time in the honey season, as last year it was hard to get them any time near the date promised. Contrary to expectations the pails have come already, and we have had to pile them in outbuildings where they will have to lie for a long time, possibly for another year for all we know. One consolation in having bought early is that they have since advanced in price. Should there be no crop, and should the pails be cheaper another year, even this one "consolation" will disappear.

IN TEXAS

F. B. Paddock, State Entomologist

THE topic most under discussion by the greater number of beekeepers of this state is the very short honey crop in that section of the state which usually produces the majority of the total output of the state.

Thruout the southwest section there is at present little or no surplus honey. In the south section the only prospect for a honey-flow this season is from mesquite during its second blooming period—from the middle to the last of June. In this district there will undoubtedly be a light flow from cotton in scattered areas. In the western section there are prospects for a honey-flow from huajilla, catclaw, whitebrush, and mesquite. In some localities it has been so dry this year that bushes which usually bloom in February are just now coming into bloom. In the alfalfa section the prospects are good for at least a normal honey-flow. The main crop here is made late, and the bees have had an opportunity to build up in spite of the heavy spring losses. In the south-central region the horsemint has not yielded any surplus. With us the cultivated horsemint dried up very quickly after coming into bloom. The bees were not able to work it over seven to ten days. There is yet some wild horsemint which came on later that is sufficient to keep the bees from starvation.

The cotton-flow will undoubtedly be close to normal. In the north-central portion the early flow has not been missed as much, and in some section the bees are in very good condition to take care of the cotton flow that is to come. In the eastern section the honey yield this season will undoubtedly be above normal. In this section the bees wintered unusually well. There was an abundance of early flow, and the bees are now in prime condition to take care of the basswood flow. Thruout the north section the prospects for a honey-yield are good from horsemint, sweet clover, and cotton.

Upon such prospects as just mentioned, the honey market is very unsettled. However, there is an upward trend in honey prices, but even at that little honey is being offered for sale. Thruout the south and southwest sections honey is being listed at 11 cents for extracted and 13 for bulk comb. Very little honey has been listed for sale over the remainder of the state, but the prices prevail strong and are continually going up. There is a general feeling among those who are best informed on market conditions that future prices for honey will be much higher than they are now. There is also a general trend toward the production of extracted honey.

* * *

Since the last notes were written the efforts of the Director of the Experiment Station and the beekeepers have resulted in the legislature providing for $5000 for foulbrood-eradication work. The appropriation has not yet been signed by the Governor, but it is hoped that the item for this work will be allowed to remain in the budget.

* * *

The program for the 21st annual meeting of the Texas State Beekeepers' Association has just been completed. This meeting is held each year in connection with the Texas Farmers' Congress at College Station. This year the meetings of the Beekeepers' Association are held during the last two days of the congress, which is in session August 1, 2, and 3. The president of the association, Mr. E. G. LeStourgeon, of San Antonio, is making every possible effort to have this meeting the best that has yet been held. It is hoped that the beekeepers of the state will help their president attain his goal. Many beekeepers have already signified their intention of coming to the meeting and a large attendance is expected. The topics which are found on the program are certainly as interesting as any that have ever been presented to the association. They are timely, and should be of much interest to every beekeeper in the state.

* * *

Up to the present time there has been but very little demand from the beekeepers of the Rocky Mountain region for combless packages of bees. Many of the larger dealers in this state were already well filled with orders when the emergency call came from Dr. Phillips for an additional supply. The greatest difficulty in this trade the past season has been to furnish queens when requested. The queen-breeders of the state have been forced to turn down more orders than they filled. General unfavorable conditions for mating is given as the chief reason for the shortage in supply.

A REAL WINTERING PROBLEM IN TEXAS.

It seems that the wintering problems in this state are not solved, contrary to the common belief. The winters here are mild, and over the entire state no extra attention is given the bees to carry them over the winter. Occasionally, for one reason or another, a beekeeper will leave on a super of sealed honey. There are those who will argue against this, saying that the additional room to keep warm will tax the bees and cause loss. The fact remains that we have so much mild weather during the winter that there is no way to keep the bees from flying, and at such times they need stores. The time is at hand when the beekeeper must see that his bees go into the winter in good strong condition and with plenty of stores. Even with honey at a high price it is not advisable to dispose of all the crop and allow the bees to suffer the following spring. Every one who has had to feed 10-cent sugar this past season wishes that he had some of the 5 and 7 cent honey that was sold last fall. Every beekeeper is anxious to have his bees up to the greatest possible strength at the time the honey-flow comes on, but it often happens that the bees cannot reach this condition without assistance from the beekeeper.

FEATURING HONEY AT THE FAIRS.

Each year county fairs are held in various localities over the state. At most of these fairs a display of honey will be found, usually in some inconspicuous place. At a few of the fairs there is a department for apicultural products, and small prizes are awarded to the exhibitors. Generally speaking, the beekeepers have not yet come to realize fully the value of such exhibits in increasing the consumption of honey. To the few beekeepers who exhibit at the larger fairs it is a matter of astonishment how little the public knows about honey. They feel that they are conducting an educational campaign for the betterment of the industry at large. It is good, however, to note the increased interest in apicultural displays at the larger fairs. Each year sees new interests which have usually been successful at some of the smaller fairs. Mr. T. P. Robinson, of Bartlett, Texas, who is in charge of exhibits at the Texas State Fair, which is held in Dallas, is already making trips among the beekeepers with a view of stimulating interest in the honey exhibits at the coming fair. The beekeepers of this state should realize now as never before the necessity of bringing before the people the value of honey, which is not a luxury but a necessity.

* * *

The matter of beekeepers securing credit from their local bankers is apparently a matter of concern in other states as well as in Texas. We often hear a beekeeper express much disgust over the fact that his banker will not consider his apiary good security for a loan. Very seldom have we heard of a banker advancing money with which to purchase additional bees, taking the bees as collateral. It is up to the beekeepers to demonstrate that beekeeping is a stable industry and not a fickle speculation. While it is no doubt true that the bankers are too conservative in accepting apiaries as security, the fact still remains that such risks are greater than in many other industries.

AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado

THE beekeepers of the Inter-mountain region will have to wake up on the container situation. While many have bought their cans, few have enough for their requirements. Should the can-manufacturers be forbidden to sell cans to beekeepers for use in storing extracted honey, we shall be forced into a very serious situation.

Barrels in sufficient quantities are unobtainable; and, even if they were obtainable, the loss from having to store alfalfa honey in barrels would be at least one per cent.

Aikin honey-bags are out of the question, as the large producer has no place to store filled bags until they are granulated solid, and they cannot be piled up until solid. A hard paper-board package might be practicable, but a bag will not do.

The best thing the beekeeper can do is to get all the cans possible and use barrels as a last resort. Many can store several tons in their large tanks, but this will necessitate a hard disagreeable job chopping out the granulated honey.

Honey of the Inter-mountain region should be put in tin cans. The matter might be taken up with the Government to advantage; and if we can secure no cans, the better plan would be to stick to the comb-honey production, so that we can obtain a honey crop in some form.

HOW MUCH HONEY IS HANDLED IN CARLOTS?

It seems to me that the estimate of only ten per cent of the honey crop being handled in carlots is pretty low. The wholesale price is not governed entirely by the carlot shipments. The local carlot shipments have a great influence on the market when they go upon the city markets, as they do in many cases.

Probably ninety per cent of the production of the Inter-mountain region is handled in carlots, or goes upon the wholesale markets; and while I am not so familiar with Texas and California, I do know that a large part of California's crop is handled in carlots, and Texas honey finds its way into the wholesale markets of Texas, Oklahoma, Kansas, and Missouri in large quantities.

If the total production of honey for the United States is around $20,000,000, the amount of honey going into the wholesale markets is doubtless four to six million.

The Bureau of Markets will doubtless soon be able to give us statistics on the honey shipments of the United States, and then we shall know more about the relation of price as affected by the wholesale market.

HARD TO ERADICATE, BUT EASY TO CURE.

In our experience with European foul brood, we find something to learn every day. It is hard to eradicate but easy to cure. What is meant by that is that an individual apiary can be cleaned up readily, but it is difficult to clean up a district comprising twenty apiaries. Bees and swarms are very elusive. We have them, and we do not have them. At the same time we are not discouraged, for I believe we are making headway. In one apiary of over 100 colonies, 24 were found affected with European foul brood. In this apiary were about 15 colonies that had been requeened last season with Golden Italian stock, several of these being somewhat weak, but not one of these colonies showed any signs of the disease on examination in May.

While it is impossible to keep all colonies strong at all times, it is easier to do so with resistant Italian queens, and the disease can be mastered with good stock and intelligent care.

GLEANED BY ASKING

E. R. Root

C. L. W., Illinois.—I learn that some large honey-producers extract before the combs are capped; others say that when two-thirds of the comb surface is capped that it is enough. Still others insist that every cell should be sealed before extracting.

A. A great deal depends on the locality and the source of the honey. Buckwheat honey may be fit to extract sometimes when but few of the combs are capped. But it is far safer to err on the side of having half or two-thirds of the comb surface sealed than to extract honey that is too green. Unripe honey sent to the market does no little damage, not only to the seller of such product, but to those selling fully ripened honey. In some localities it is well enough to extract when two-thirds of the combs are capped over. If one waits till every cell is capped he is liable to force swarming, and at the same time may cut down the crop somewhat.

It should be always borne in mind that unsealed cells may contain fully ripe honey; and in rare instances sealed honey may not always be ripe; but we strongly urge every beginner not to extract until two-thirds of each comb surface is capped over. Better err on the side of having used the uncapping-knife too much than not enough.

G. L. D., New York.—Will I not secure a better price if I sell my honey on commission than sell outright for cash?

A. That depends. If the commission house is reliable it can and often does get the beekeeper a larger price than if he sold at the then cash price; but if the house is not reliable it may make false returns. We have known of several instances where a commission house has sold extracted, say at ten cents, but made returns on the basis of only eight. Unless a producer can trace his honey to the buyer, he cannot know for what his honey actually sells for. As a general proposition it is safer to sell on an actual cash basis: and among reliable houses the practice is becoming more and more common.

E. E. F., Wisconsin.—If I have a bad case of robbing when a colony is nearly overpowered what shall I do?

A. In some cases it may be best to let the robbers finish up the job. If the entrance of the robbed colony is closed entirely, the bees inside may be suffocated while the robbers on the outside will pounce on every other colony in the immediate vicinity. The result is that the trouble is scattered all over the apiary. A far better plan is to put a wire-cloth cage over the robbed colony. At intervals of two or three minutes lift the cage and let the robbers rush in from the outside. In the course of ten or fifteen minutes the robbers will all be trapped in the upper part of the wire cage. These trapped bees should not be released except at an outyard. If they are let out at nightfall they will repeat their work the following morning. They had better be killed outright than to be let loose again, especially if one has nuclei or is attempting to raise queens.

M. M. B., Illinois.—When can one decide that the honey-flow is beginning to wane?

A. If the flow is from clover, two-thirds of the clover-heads will be brown, and the rest will show fairly fresh heads. If the bees at the entrance are tugging at the drones at the entrance, showing that they are unwelcome, and if they show an inclination to rob along about the middle hours of the day, it may be surmised that clover is at or near its end. Some fresh rains, however, may prolong the season.

S. E. G., Pennsylvania.—What makes my bees so cross immediately after the honey-flow, especially from basswood?

A. It may be set down as a rule that bees will be cross immediately following a sudden stoppage of the flow of honey. It does not make any difference whether it is at the close of the honey-flow or whether a hard summer rain has washed the copious supply of nectar out of the blossoms. In the same way, bees will be cross along about ten o'clock after they have been gathering all the honey out of the buckwheat blossoms. They will be fearfully cross when the sun dries the honey-dew or aphid secretion from the leaves of certain shade and forest trees. The dew of the morning softens the saccharine matter; and when the sun dries it down to a hard varnish the bees will often be very cross. In the same way bees will be very cross after robbing if the sweets they are robbing be suddenly cut off.

F. H. B., New York.—Why is it that basswood is so often a failure?

A. No one knows. It very often happens that when clover is almost a failure basswood will come in strong. As a rule it will be the other way. The same causes that operate to make fruit-trees fail some seasons to yield probably operate on basswoods. In most localities basswoods do not yield more than once in two or three years, and sometimes only once in five years.

E. B. P., Pennsylvania.—I have some colonies that are fair, some that are strong, and some that are weak. I wish to produce both comb and extracted honey. How shall I proceed?

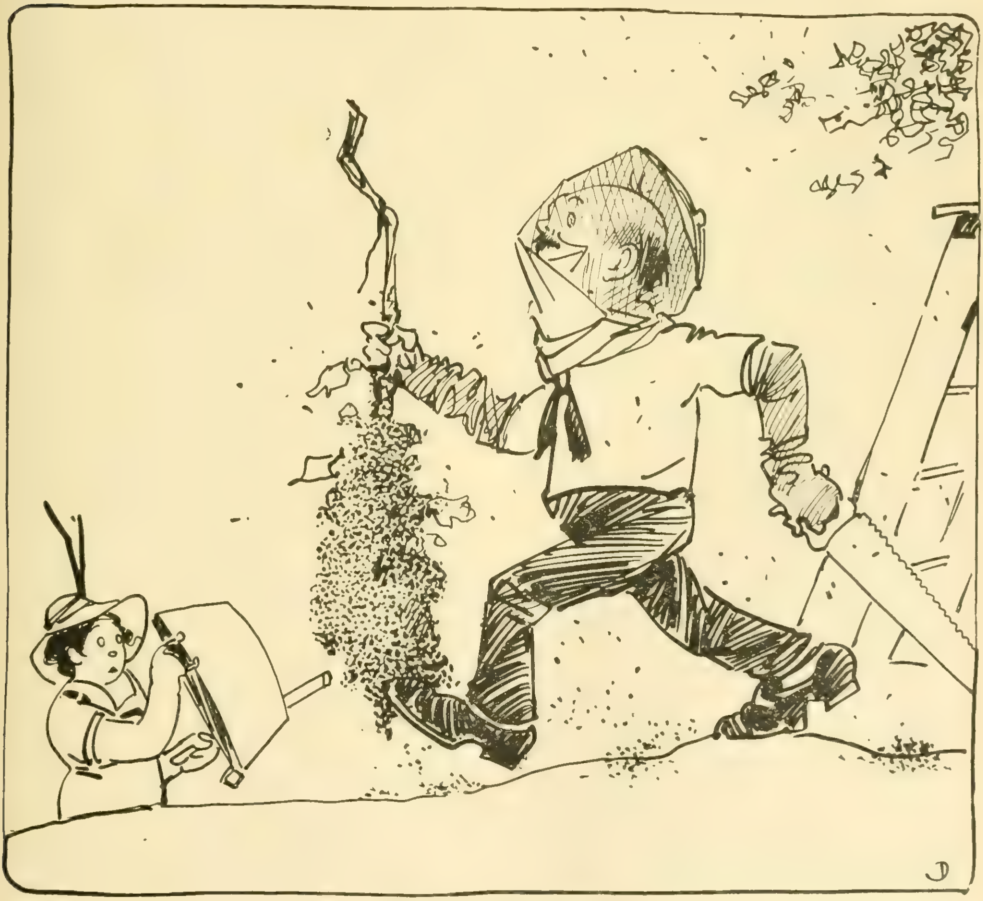
A. Use strong colonies for the production of comb honey. Those of fair strength may be used for producing extracted, giving them combs as fast as they will take them. Where a weak one happens to be by the side of a fair one as to strength, the two may be united, moving the united colony to a point midway between where the other two stood. If there is no choice of queens let the bees eliminate one or the other; but the queen of the weak colony, if she is a poor layer, should be killed; and as a matter of precaution the other queen should be caged for 24 hours before being released.

A weak colony left by itself will be of no value except for increase. By fall it may be built up to a good strong colony; and if there is any fall flow it may be useful in gathering some surplus. But in most localities it will need whatever it can gather after September 1 for winter stores.

G. L. C., Ohio.—Which is worse—European or American foul brood?

A. That depends. Some beekeepers maintain that American is not to be feared, because they can easily control it, while others hold that European is the easier to handle. The last named does not require the destruction of combs, and according to some of our best authorities can usually be cured by requeening with vigorous Italian stock. If European starts in a yard, it is liable to take the whole apiary, because it progresses far more rapidly than the American type of the disease; and it may be necessary to requeen the whole apiary before any great measure of relief can be expected. But European is more insidious; and, as Dr. E. F. Phillips, of the Bureau of Entomology, says, it does not fight fair, because sometimes all repressive measures fail for a time. On the other hand, American, if one is careful, can always be cured by shaking on foundation, taking the precaution to see that no diseased honey is scattered around. But when shaking, one must be careful to see that the bees do not swarm out. Perforated zinc should be placed over the entrance to hold the queen in until the swarm is really started in housekeeping.

Of the two diseases, we should fear the American more than the European. It costs



THE BACKLOT BUZZER.

BY J. H. DONAHEY.

Mother says it's all right about the successful beeman having to look at everything from the bees' viewpoint; but what she wants to know is why they can't find some other way to express themselves. She says they just back up and push.

less to treat the European, and some of our best beekeepers, including Dr. C. C. Miller, S. D. House, and many others, feel that the European is easily controlled; and some go even so far as to say it is a blessing in disguise, because it wipes out all the box-hive beekeepers and the slovenly, don't-care class who are continually cutting down prices and demoralizing the industry generally.

The American works the same way; but as long as there is any American in the locality, a healthy yard conducted by an intelligent beekeeper is always in danger of infection. That does not necessarily follow in the case of European.

W. B. C., Missouri.—When bees are loafing out at the front of the entrance, will smoking make them go to work in the supers?

A. Clustering out in this way is usually caused by too contracted an entrance or a hive placed out in the hot sun. The remedy is to enlarge the entrance or place a shade-board on top of the hive or both. The shade should be large enough to cover the hive during the hottest hours of the day. The entrance should not be less than ⅞ by the width of the hive; and it may be necessary, in case of strong colonies, to lift the hive off the bottom-board and place four ⅞ blocks on each corner and put the hive up on the blocks. This will usually stop all loafing. We would not advise lifting the hive up in this way unless it is at least two-story in size. A ⅞ entrance by the width of the hive is usually enough for a one-story colony.

Ordinarily, smoking the bees back into the hive thru a small or limited entrance is only a temporary expedient. It does little or no good. The real remedy lies in more ventilation or shade, or both.

A. B. C., Corinth, N. Y.—How can one qualify himself for a bee inspector? What are the qualifications necessary? Does one have to be a college graduate?

A. One does not need to be a college graduate in order to be a bee inspector. He should, however, be a good practical beekeeper and be thoroly familiar with the various forms of bee diseases. If he can go along with a bee inspector on a regular trip he will get a great deal of valuable information and experience.

It is important that a bee inspector know the subject of practical beekeeping pretty thoroly, because one of his principal duties will be to instruct beekeepers on how to keep bees as well as how to prevent disease from getting started among the bees.

G. J. S., Ontario.—We have been trying to keep a few bees on our farm situated on the south shore of Lake Ontario. We have had rather poor results in building up during summer, and also in wintering which I lay to weakness. I have been wondering if our location so near the lake is detrimental.

A. Bees do not do quite so well close to a body of water as a few hundred feet back. When they are located next to one of the big lakes the cold wind off the water is apt to prevent the bees from building up as they should. It is not at all surprising that you should have trouble in building up your colonies in the spring if you are right on the lake shore. You could, perhaps, improve matters by moving your bees back a few hundred feet, and slightly back of shrubbery or a clump of woods—anything that will break up the fierce piercing wind right off the lake. We have had other reports of people who had difficulty in building up bees right next to a large body of water, and your experience is not unusual.

A. L. H., Pennsylvania.—How can I know when it is time to put on extra supers for comb honey?

A. The usual rule is when the bees begin to whiten the tops of the combs and to store a little honey in the brood-nest. But sometimes this may be too late, and swarming may be induced in the mean time. It is best, therefore, to put on supers at just about the time the honey-flow begins to open up.

B. C. L., Michigan.—How may I know when to put on supers for extracting?

A. When the main honey-flow begins to open up, and perhaps a little before, a super of extracting-combs should be put on. It is better to be a little too soon than a little too late. Delay may force swarming; and if that once gets started in the yard it will be difficult to hold it in check. Very populous colonies should be given room in any case.

Question and Answer

BY GRACE ALLEN

(To Dr. C. C. Miller, who has answered such questions so often, so patiently, and so wisely.)

THE QUESTION

"You who are full of years, and wise,
And see with such understanding eyes,
Answer me this: Shall I, who am young,
Work where songs of birds are sung,
Consort with seasons and winds and trees
And murmurous incomprehensible bees,
Or match my youth with the task of the town
In a game where the players go up and down,
Where figures in columns and figures across
Spell fortune and failure and increase and loss?
Shall I answer the call of the counting-room
Or the call of the bees on the clover bloom?
Oh! where lies my profit in years to come,
In ledgers that balance or bees that hum?"

THE ANSWER

"You who are young, with eyes like flame,
In love with a song, lured by a game,
Longing for wealth—your own true heart
Must tell you at last the better part.
But I who am older say this to you:
Do the thing that you love to do.
Thus work is not drudgery, work is delight,
With zest thru the daytime and rest thru the night.
Gold, to me, is not truer wealth
Than peace and happiness, love and health,
With wonder and worship and simple ways
And a sense of God thru all the days.
But ask your own heart; this is how it looks
To a keeper of bees, not a keeper of books."

JUST NEWS

Editors

FROM reports reaching this office from all parts of the United States and Canada we should judge that the white-clover prospect is generally very fair. Ontario, Michigan, and Wisconsin send word of some excellent clover conditions. A few localities report bad clover conditions. From all parts of the country comes word of a season generally a month late, and in many places bees in an almost starving condition at a time of year when they are generally providing plenty of food for themselves. Cool winds and generally unfavorable weather conditions have been the almost universal complaint from the Pacific Coast to New England up to the middle of June. California, however, broke into the hot-weather column early in the month, and Florida and the southern states report extracting having begun in many cases about June 1.

* * *

The month of May, 1917, won the unenviable distinction of being the coldest May in Ohio since the establishment of the United States Weather Bureau in 1871. The temperature averaged from 10 to 20 degrees below the seasonal normal. So Ohio beekeepers are in about the same backward condition as is all the rest of the country.

* * *

Mr. Elmer Hutchinson, raspberry-honey producer at Lake City, Mich., writes under date of May 25 that he had saved all his bees from the forest fires prevailing in that region, but that so many of the berry bushes had been burned that many of his bees would have to be moved to avail them of the scattered patches of berries left unburned. On that date, May 25, Mr. Hutchinson reported a foot of snow covering the ground in that region.

* * *

In Massachusetts a number of beekeepers' meetings have been held under direction of Burton N. Gates, of the State Agricultural College, to promote an increase of honey production in view of war exigencies. At these meetings a general survey of the current beekeeping situation was presented. Emphasis was laid upon the utilization of the bees at present available rather than to recommend the increase of apiaries. It was also explained that the apiaries where practicable should be utilized for extracted-honey production, as, colony for colony, at least double the number of pounds of honey could thus be turned out. Particularly was it recommended that what honey may be produced this year be procured with the idea of supplying the home demands. Beekeepers were advised to place their orders for supplies, including particularly containers for packing their honey in the fall, as soon as possible. Under the authority of the Massachusetts State Board of Agriculture local apiary advisors, or agents of the board, were to be appointed. A limited number of these appointments are made, which appointees will serve to afford information to their neighbor beekeepers and as informants to the office in Amherst. It is expected that this system will greatly facilitate the help which the state offers to the beekeepers. A census of honey-extractors has been made. Practically all extractors are now listed in Amherst so that the beekeepers of the state who desire to extract a little honey, but who do not have the facilities, upon applying to the office in Amherst can learn of the nearest available extractor. Nearly every beekeeper who owns an extractor has kindly offered the use of it, in the emergency, to his neighbor beekeepers. The interest shown by those who attended the meetings has been keen. The beekeepers show their willingness to co-operate, and signify their intention to do their best to produce more honey.

* * *

It has been arranged to hold the annual beekeepers' school under the auspices of the Massachusetts Agricultural College in Dalton, in the heart of the Berkshires, July 11 to 14 inclusive. All persons interested are invited to attend. Copies of the program will be mailed upon request. There is no fee nor expense attached to attending the school. The first day is to be beginners' day. The second day will deal with the problems of swarming; measures of swarm control; the making of increase; comb-honey production; queens and queen-rearing. The third day is extracted-honey-production day. The fourth day is a general field day, announced by the Berkshire County Beekeepers' Association.

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Mr. L. A. Syverud, state bee inspector of South Dakota, has moved from Troy in that state to Yankton, so as to perform better his duties as inspector.

OUR HOMES

A. I. ROOT

And Joseph went out from the presence of Pharaoh, and went throughout all the land of Egypt. And Joseph gathered corn as the sand of the sea, very much, until he left numbering; for it was without number.—Gen. 41: 46, 49.

And God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.—Gen. 1:28.

Since there has been such a call, from our good President all the way down the list, for making provision for a possible famine I have been reminded of that wonderful chapter in Genesis where Joseph warned the king, who appointed officers over the land to take up the fifth part of the crops during the seven plenteous years. Considering all of these things I have reviewed the many hobbies of mine that I have ridden during the past seventy years; and I feel glad and thankful when I remember that almost every one of these hobbies was in the line of providing good and wholesome food for the hungry multitude. When I became enthusiastic about the possibilities of bee culture I said that honey, like butter and eggs, should not only be offered for sale in every corner grocery, but it should also be on sale like butter, cheese, and eggs, *every day in the year*. Well, my prediction has not as yet exactly come to pass; but just now as I write on this 6th day of June, not only the Department of Agriculture but every farm paper, and many periodicals not devoted to farming, are urging that bees enough be kept to gather the honey that goes to waste in such unlimited profusion almost every season. And this comes about just now particularly because of the possible scarcity of sugar in the near future.

While I am talking about honey I am reminded that Mr. Calvert has just said that there is already difficulty about getting glass and tin containers to hold the honey. Well, I have always urged, and I urge more particularly just now, that the whole wide world should unite in making the *shortest possible cut* between producer and consumer. During these war times there is a big excuse for the middleman to put prices away up, and the poor consumer has no means of telling whether there is an honest reason for the big advance or no reason at all except to satisfy the greed of the middlemen.

I said to Mr. Calvert, "Look here, John, why not advise beekeepers to carry their honey around the neighborhood in bulk and ask the good women to bring out a pitcher or fruit-jar and get what they require?"

Mr. Calvert replied that the above plan was always safe and honest, and would be a tremendous saving in the end.

Now, friends, *why* cannot the producer load up his butter and eggs, and *honey*, and carry them around to the consumers? Yes, it takes time, I know; but it will be a tremendously big saving by cutting off this business of robbing both producer and consumer by the cheats that are all the time going on in the transfer of these necessaries of life from the producer to the consumer? Just another thing right here:

If the man who carries around his honey, butter, and eggs is a good man (I should like to say a follower of the Lord Jesus Christ) he will very soon establish friendly relations with all his patrons. They will learn to love him, and he will learn to love them; and this spirit of charity and kindliness will grow up on both sides so a misunderstanding or a jangle about prices will be almost an impossibility.

Well, in thinking over my various hobbies, and in running over hastily yesterday's *Plain Dealer* I came on to something that gave me quite a "jolt." Here it is:

> All the inhabitants of an Indiana village turned out with pitchforks the other day to shovel in thousands of German carp that were blocking the river. That's carrying the war into the interior, all right!

Our older readers will remember that fish culture, especially growing German carp, was at one time a hobby of mine; and after reading the clipping I turned to chapter 41 of the book "How to be Happy," etc., that was lying on my table. If you have the book, perhaps you had better turn over to that chapter. A good friend of mine, who was an enthusiastic beekeeper also, became interested in growing German carp; and he succeeded so well that he advertised and sold little fishes to start a carp-pond for only $1.25 a hundred. I paid him a visit and looked over his ponds, one below another, between the hills of Medina Co.; and I do not think I ever spent a happier hour. It happened so many years ago that Huber, who went along, was but a small boy.

Well, my impression is there was *no failure* in growing an abundance of German carp at very small expense; but the general decision was that the quality of the fish was not quite equal to the food fishes on the market. But my opinion is just now that if these fish were fed on grain, like cattle, swine, and poultry, we should find that "corn-fed" *fish* is very much like corn-fed beef, etc. If German carp are now so plentiful, as mentioned in the clipping above, that they have to be shoveled away by the thousands, we can certainly use them to prevent starvation if such a thing should ever happen in our own country.

Well, during all these hobbies of mine in years past, every little while something has come up in the line of poultry-keeping, high-pressure gardening, etc., to stir the world. You may remember how enthusiastic I was about Indian Runner ducks that laid such a tremendous lot of great big eggs, and went down in the canal and almost boarded themselves. Well, it was with duck eggs as with German carp. When fresh hens' eggs could be bought for 20 to 25 cents a dozen, nobody wanted the duck eggs at *any* price; but just now I think hungry people would be very glad to get the duck eggs. And, by the way, I would just as soon have duck eggs for myself as hens' eggs, especially if the ducks have plenty of corn any time during the day, when they want a little to make up a "balanced ration."

I wonder if you ever thought of it, my good friend, that when there comes a scarcity of some particular article of food that sends the price away up, *then* the busy world pays a lot of attention to improved methods and short cuts in putting on the market this special commodity. Potatoes we are having on our table now, at least twice a day, cost $1.20 a peck; and this extravagant price is turning the attention, I think I might almost say of the whole wide world to the possibilities of intensive agriculture along the line of growing potatoes; and it is going to do a lot of good; for these improved methods that are largely brought out by such high prices will often be such a tremendous improvement that they will not be entirely dropped, even if potatoes should go away down again; for in this present age every improvement, especially in the line of agriculture, very soon gets into print.

The other evening, by some misunderstanding there was no leader for our prayer-meeting. After the audience had waited for about fifteen minutes somebody suggested that I should lead. I remarked that, not having expected anything of the kind, of course I was unprepared; but until the leader came I would take that part of the Lord's prayer which reads: "Give us this day our daily bread;" and I reminded the good friends that before this war is ended we as a nation, and as a people, might have more reason to put emphasis on that part of the Lord's prayer than we ever did before. When the meeting was about half over, a good brother suggested that what the Savior said after the feast of the loaves and fishes, "Gather up the fragments that nothing be lost," would come in very appropriately right here.

The Department of Agriculture at Washington has been telling us that the good wholesome food thrown into the slop-pails right along all over the United States amounts to something like 700 millions of dollars a year. And this reminds me that one summer I took a trip up to a pleasure resort in northern Michigan. A beekeeper had located not far from one of the great fashionable hotels; and, as is often the case, one of his side lines was poultry; and he got the privilege of taking the waste from the dining-tables to feed his chickens. But as there was very much more than the chickens could use he branched off into the pig business; and when I was there he had a great bunch of pigs, little and big; but as the season got up to its height the refuse from the tables got to be so large that the *pigs* could not use it all, and the stuff accumulated had begun to decay so as to make a bad smell for the whole neighborhood. Now, this refuse from the tables was composed of the richest and most expensive food that money can buy. I think our friend quit the business and let somebody else take the garbage as a gift if he would only haul it away.

When traveling I often keep an eye out in regard to this matter of waste around hotels, restaurants, and sometimes in private families. I have often remonstrated; but generally the excuse is to put the blame upon the average hired girl; and one of the troubles is the difficulty of getting competent hired girls (and they know it); and if the good wife ventures to find any fault she is very apt to hear, "Well, if you do not like my way of doing, perhaps you had better try somebody else."

Now this whole thing indicates a wrong state of affairs. Many times the mothers and the children would be far better off if they did their own work instead of having hired help. And, by the way, this same hired girl, when she gets married to a man of small salary, will be obliged to learn, by "gathering up the fragments."

A great deal of the fault comes about because of the way the children are brought up. They are permitted to be wasteful. Years ago, in that little log house in the woods (where I was born) my older brother dropped part of a slice of bread on the well-scrubbed floor of the kitchen. The good mother assured him it was not hurt at all by falling on the floor (buttered side up); but, like many another child, my brother was contrary. My mother finally told him that he would have to eat that piece of bread, and that he could not have another bit of food until he did eat it. He got into a sulk and went without his dinner. At supper time she offered him the same piece of bread; but he was contrary and stubborn still. I cannot exactly remember, but he finally became so hungry that he was willing to eat the bread, after the good mother had volunteered to eat half of it herself. Bless the memory of that good old mother! She knew that the settlement of that question would have a marked effect on the *character* of the four other children who were looking on. We want mothers of that stripe just now, especially while this wicked war confronts us.

In conclusion, dear friends, shall we not *all* use that part of that wonderful prayer, "Give us this day our daily bread"? and shall we not remember, too, that to be consistent we must also remember that other injunction about gathering up the fragments; and let us, like Joseph, improve this growing season, and let the product of our farms and gardens be carefully *preserved* for the time of need; and let us not forget the *fishes of the sea,* and the *fowls of the air,* that the great Father in his loving kindness has provided for us.

HIGH - PRESSURE GARDENING

POTATO-GROWING IN FLORIDA; OVER A MILLION DOLLARS PAID FOR FLORIDA-GROWN POTATOES AT ONE SHIPPING-POINT.

Just as soon as the price of potatoes began to run away up last fall, I declared, as you may remember, that we would have to depend on Florida to help us out; and to demonstrate that potatoes could be grown there at a profit all winter long I secured two crops from the same patch of land in just one winter. Below is a clipping from the Jacksonville *Times-Union* that indicates what *has* been done, but not what it is *possible* to do while we up here in the North are frozen up.

HASTINGS POTATO HARVEST EXCEEDS ALL EXPECTATIONS.

FOURTEEN HUNDRED CARS HAVE ALREADY MOVED OUT; SHIPMENTS AVERAGE 150 CARS DAILY.

Hastings, May 5.—Hastings, with the potato-shipping season at its height, is probably the busiest little town in the United States. The crop has exceeded the wildest expectations, and sixty-barrel averages are common, and many growers have exceeded this average considerably. The crop has so far exceeded all anticipations that enough barrels to hold the crop cannot be procured, and much of the stock is being shipped in hampers, crates, and sacks. The supply of these is hardly adequate to meet the demand, and the entire output of bag-factories is being shipped to Hastings and is being snapped up immediately upon arrival.

Everybody is busy. The days are not long enough, and work is kept up far into the night. In many instances hauling is being done long after dark.

One hundred and thirty cars per day is about the average shipment, and at this writing more than fourteen hundred cars have been shipped. It is estimated that about half the crop has been moved.

Dozens of motor trucks have been purchased by the growers to move the crop to the station, and many more trucks from Jacksonville, St. Augustine, Daytona, and other points are here with every one doing all the business he can handle. Notwithstanding the tremendous output of "spuds" the prices continue high, $7.50 per 11-peck barrel and $6.50 per 150-lb. sack for number ones, f. o. b. Hastings being the prevailing price.

The Bank of Hastings has more than doubled its force, but still work is kept up until midnight or later. The total deposits of the bank have reached the one-million mark.

Last Saturday more than $40,000 was paid out for payrolls and other expenses incidental to the harvesting of the crop. In common with everything else the postoffice is almost overwhelmed with business, particularly on Saturday afternoons, after the field hands have been paid.

It is then almost impossible to get at the delivery and money-order windows. The storekeepers are sharing in the general prosperity, and have all been compelled to increase their forces.

The potato is king, and all forms of activity not connected directly or indirectly with the potato deal are practically at a standstill. Sleeping room is at a premium, and in some cases tents have been resorted to, to accommodate the overflow.

POTATO - GROWING IN FLORIDA, SOMETHING MORE ABOUT IT.

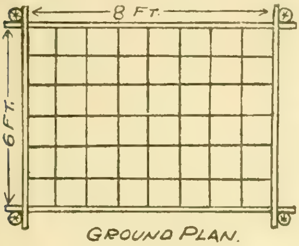
We clip the following from the *Manatee River Journal.* Please notice while you read it the amounts mentioned were grown over a small part of Florida.

The potato growers of the Hastings district, including Elkton, Spuds, Hastings, Byrd, Orange Mills, and other points to East Palatka have practically finished digging and selling the vast crop of spuds, there remaining only a few pickups which, after this date, will be handled in carload lots, and the great potato specials will now be discontinued over the Florida East Coast railway. While complete crop statistics are not yet obtainable, it is known that the total yield will exceed 3000 solid carloads, which means fully 570,000 barrels, or over $4,000,000 net to the growers. This vast sum has been dug out of about 11,000 acres.

HIGH-PRESSURE GARDENING WITH A VENGEANCE; FORTY BUSHELS OF POTATOES ON A PLOT 6 x 8 FEET SQUARE.

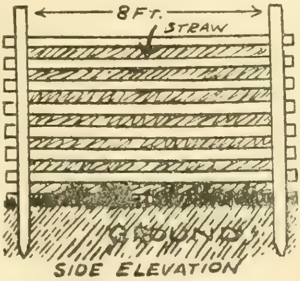
Some time during May I found in our county paper, the *Medina Gazette,* an article telling how the above feat was accomplished. Shortly afterward clippings were sent me by many friends. These clippings were from different periodicals describing the same thing. Most of the accounts were from some of our *Sunday dailies.* After some trouble I ascertained the man who claimed he had performed the above feat was R. E. Hendricks. I applied to him at once for anything he might have in print describing the invention. Below is his reply:

Mr. Root:—I am out of booklets now, but will try to describe to you my plan. You can build a pen 6 feet wide and 6 high, and as long as you wish. I think 6 feet wide is best. The first diagram represents the ground plan, 6 x 8 feet, 35 hills of potatoes to each 6 inches in height of earth. Plant a potato eye on each one of the cross-lines, 35 in each layer of dirt as shown above; then put a little rotten manure on the potatoes; then water each layer well as fast as you plant them. The first row inside of the pen must be 8 inches inside the pen line; then space and mark off and plant and repeat, making each layer of dirt 6 inches deep (or high), one on top of the other. The mark across the upper part of the side elevation is known as a "moist-tester."



GROUND PLAN.

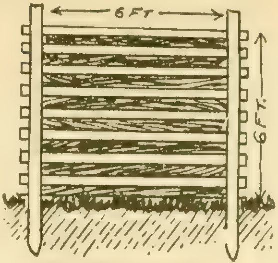
If you use boards for the pen, leave a three-inch space between each two rows of boards. Build the pen as you plant, and fill the three-inch space with hay or straw, and vines will grow out thru them all around the pen and at top. Use wires crosswise thru the pen to keep the sides from springing.



SIDE ELEVATION

The moist-tester may be made out of a pole about 4 inches in diameter and 3 feet long. Place it in one side of the pen about two feet above ground. After the potatoes have been planted three weeks, pull the tester out and run your hand in and examine the dirt as to moisture, then repeat one or two times after this. By so doing you can tell how much water to use on the pen. Watch it closely, and keep the dirt in proper condition. If there is too much rain, cover the pen up. Thanking you for copy of your journal, and wishing you success, I hope to hear from you again.

R. E. Hendricks.
2536 Elmwood,
Kansas City, Mo.



END ELEVATION

Please notice in the above he says nothing about the forty or more bushels. Among the clippings from the different periodicals sent me is one from the San Francisco *Bulletin.* This one clipping describes the whole matter more in detail than the others, and so I give it entire:

42 BUSHELS OF POTATOES GROWN ON EIGHT-FOOT PLOT; MISSOURI MAN'S METHOD PROMISES TO REVOLUTIONIZE THE INDUSTRY.

Forty-two bushels of potatoes in the season of 1916 from a plot of ground only eight feet square, or an equivalent of over 28,000 bushels to the acre of ground space used, was the astonishing feat of R. E. Hendricks, a resident of Kansas City, Mo.

This sensational achievement was made possible by the use of an entirely new and original method which, when generally introduced, promises not only to revolutionize the potato-growing industry thruout the world, but to solve the problem of an unfailing source of cheap food supply for the nations of the earth.

The story of Hendrick's successful experiments in potato-growing, covering a period of three years, sounds more like a fairy tale than a recital of facts, yet it is so unique and interesting that it at once compels attention. Expert gardeners and farmers who have looked into the plan carefully pronounced it not only practical, but call the originator the greatest plant wizard of the age, and declare that he has anything in plant culture and intensive agriculture beaten by a wide margin.

Like all great discoveries, Hendricks' method of raising potatoes is founded on such simple elemental principles that one wonders "why some one didn't think of it before." He had often watched the potato-pile in the cellar-bin, which every spring sent out its shoots thru every possible crack and crevice. Sometimes these sprouts would crawl out along the floor a distance of seven feet in order to reach the light. From this beginning he conceived the idea that if this pile were removed out into the open and given soil and fertilizer, with proper conditions of light and moisture, the potatoes would grow and reproduce their kind.

IN A POTATO-PEN.

Three years ago he built what he called a "potato-pen," which was nothing more nor less than a huge potato-hill, the sides of which were supported by a loosely constructed enclosure, built after the fashion of an old rail fence. Within this enclosure, only eight by eight feet in size, he planted his potatoes in thin layers of dirt and manure, piling one layer on another until the pen was eight feet high. The potato-pen become a mound of green.

He had found that his potatoes not only grew better than they did in the cellar, but that at digging time he was able to harvest 40 bushels of as fine potatoes as are grown anywhere. The following year he secured 32 bushels in the same-sized pen, and last year the astonishing total of 42 bushels.

Up to this time Hendricks had conducted his experiments unknown to but a few of his most intimate associates; but owing to the present food shortage, and the nation-wide campaign to speed up food production, he decided to give up his discovery for the free use of people everywhere.

The details of the construction and management of these potato-pens, as described by Hendricks, outline a plan by which any one having access to a plot of ground no larger than a flower-bed can raise all the potatoes needed for an average family for a whole year. The potato-pens may be built eight feet wide by any length, just so they are built strong enough to keep the sides from spreading. Almost any kind of good stout material can be used. If light lumber or boards are used the pen may be braced thru the center with wires. Rich earth and well-rotted manure must be on hand in sufficient quantities to fill the pen to the top.

HOW THE PEN IS BUILT.

Hendricks' potato-pen is built six feet by eight feet, inside measurement, and six feet high.

The pen is built as each layer is placed and planted. You can use 1 x 6-inch boards for the ends and sides, leaving 2½-inch space between the boards for the potato sprouts to come thru. Start the pen with a six-inch layer of dirt. Then mark off the plat a foot apart each way, allowing six inches of space for dirt all around between the outer row of potatoes and the inside of the pen. Plant a potato seed at every cross-line or intersection of the plat, 35 hills to the layer of dirt. Then put an inch or two of well-rotted manure over the potatoes and sprinkle well with water. Then lay six inches more of dirt and mark off as before; plant, manure, and water again. Repeat this operation with enough layers to fill the pen to the top. To keep the dirt from falling out of the pen as the layers are placed, draw up old straw or hay against the cracks or crevices.

As the pen rises, place on the fourth layer of dirt in the center of one side, about two feet above the ground, a "moist tester." This is made of any piece of timber about the size of the arm, a piece of 4 x 4-inch by three feet long, placed so it will protrude from the pen about a foot. After the potatoes have been planted three weeks loosen the tester, pull out and run your hand in to determine the moisture. By so doing you will know how much water to use on the pen. After the tester has been once removed this can be repeated once or twice a week. Watch the tester and keep the dirt in proper condition.

CONTROL OF MOISTURE.

The pen should be near a water supply so that it can be well watered during dry weather. It should be watered from the top about twice a week unless rainfall is sufficient. The "moist tester" will always enable the grower to determine the proper moisture conditions. The top layer of dirt should be sloped gently toward the center, so the ground will absorb and not shed rain, but care should be taken that mud be prevented from forming on top and baking to a crust. When the earth is dry the mound should be sprinkled on the top and sides. The potato-vines will grow to the top and sides of the pen (the nearest way to the light), emerging thru the crevices and concealing the timbers with a coat of green. When the potatoes are matured the pen may be taken down, the potatoes rolled out of the thin covering with a rake, and the material, dirt, and manure saved and used again and again.

LATE PLANTING POSSIBLE.

Potato-pens may be started as early and as late as possible, giving potatoes 90 days to mature, except the early ones. The usual time of planting potatoes in the North is from March to June; but under this method the potatoes may be planted much later than is possible under open field conditions, where the factor of hot dry weather must always be taken into consideration.

With irrigation and every possible condition of good potato-growing — moisture, ventilation, and drainage—always under his control, the grower is practically certain of his crop.

In his experiments, Hendricks used the Red River Early Ohios for seed, cutting two eyes to a good-sized piece. This year he is experimenting with other adaptations of his plan, and expects to have some interesting announcements to make by next November. Hendricks is backed in his work by a good wife, and his neighbors of 20 years' standing vouch for his honesty and integrity.

The possibilities of this new method of raising potatoes, in the saving of labor and of land, are amazing to contemplate. When outside conditions are unfavorable the production can be carried on successfully under glass, and shipping from warmer climes made unnecessary. With such a cheap source of food supply within reach of all the people of the earth the specter of famine and the day of high-priced foods will become a thing of the past.—*San Francisco Bulletin.*

The cuts shown will enable one to understand better how the pen is built.

Now, the whole thing (especially before I got full details as above) seemed to be so much of an impossibility that I submitted it to our Ohio Experiment Station, and below is Prof. Thorne's letter:

OHIO AGRICULTURAL EXPERIMENT STATION.

My dear Mr. Root:—Mr. Green suggests that the "potato-pen" lacks just one thing—an oven under it so that the potatoes will come out ready baked.

Of course, some potatoes might be grown on the outside of such a pen. Do you remember the strawberry-barrel that was advertised about the time you and I began writing about bees? But the seed planted in the interior would rot, just as it would if buried two or three feet under ground; and when it comes to stripping off a quarter acre or such a matter to get good soil to fill the pen, and carrying the water it would require to keep the crop growing, I beg to be excused. I prefer to grow the potatoes on the soil where it lies.

CHAS. E. THORNE, Director.

Wooster, Ohio, June 6.

After a pretty full investigation I am not able to discover that anybody gets any profit out of it. I have once given my opinion in print that *4* bushels to the pen would be perhaps nearer right than *40 bushels;* but a good friend of mine who was connected with our Ohio Experiment Station in years past has faith to believe that 10 bushels might be taken by means of such an arrangement. There are, perhaps, half a dozen such potato-pens already started in our town of Medina; and nobody knows how many of them have been built and planted thruout the land as the result of this newspaper sensational clipping. The New York Coal Co. sent a telegram to Mr. Hendricks in regard to this enormous yield, and I clip the result from the coal company's circular as follows:

Question 1. How many years have you built these potato-pens?

Ans. Three years with success.

Question 2. What is the average annual output of potatoes in one of these pens?

Ans. In a pen 8x8x8 ft. I took out 42 bushels first year, 34 bushels the second year, and 42½ bushels the third year.

Well, I was not satisfied even then, and so I sent a postal card to a beekeeper in Kansas City, Mo., a good reliable man, and asked him for a brief report which I could use before this journal goes out. Below is his reply:

> In accordance with your request I made a trip to R. E. Hendricks, and will report more fully on the potatoes about August 1, this being the first trial in Missouri. About 40 years ago, in North Carolina. Mr. H. tried it. G. P. STARK.
>
> Kansas City, June 14.

As we go to press there is some mystery in regard to this whole matter. Everybody reading the newspaper clippings took it for granted that Mr. Hendricks' wonderful results were made at his home in Missouri during the past three years. In fact, you will notice on p. 558 the statement that he succeeded in getting 42½ bushels (worth today, here in Medina, $204.00) during 1916, and he gives as a reason why some of his near neighbors knew nothing about it was that he gave a promise of secrecy to the man who originated the plan.[*] With the present high price of potatoes, no doubt such a plan will pay.

The concluding paragraph of the long clipping I have given above suggests growing potatoes under glass; and this in turn suggests the idea to me that, should a frost come, either in the spring or fall, it would not be a difficult matter to protect the potatoes by means of blankets or something similar to a tent. I hope good will come of it, even if we do not get "40 bushels" from a bed not much larger than an ordinary dining-table. In the *Youth's Companion* for April 19 we found a picture and description of a sort of mound made with sides sufficiently sloping so potatoes can be grown down the sides as well as on top. This is, no doubt, possible; but all such arrangements will require an abundance of fertilizers, either well-rotted stable manure or chemical, and the best of soil. As soon as any of the friends can furnish me reliable information in regard to the result of this potato-pen I shall be very glad to get it.

HEALTH NOTES

ALFALFA AND SWEET CLOVER TO "REDUCE THE HIGH COST OF LIVING."

A single paragraph of a letter that I now hold in my hand has taken a mighty hold on me. Read it and you will see why:

> *Mr. A. I. Root:*—My object in writing to you is to call your attention to a substantial milepost in the high cost of living—that is, to the new trick your friend Alfalfa has played on us out here. We find it makes the finest greens of almost anything we have ever tried. Just pick the tender ends of the plant and cook them like any other good greens with hog's jowl or otherwise to suit, and you will not want anything better along that line. It beats poke and many other kinds of greens people use in this country, and is as good as if not better than mustard or turnip greens, and (I will guess) more nutritious. Any way, try it and report.
>
> Morristown, Tenn., April 9. J. J. KOGER.

After reading the above I went out in the garden and cut quite a bundle of shoots of alfalfa, just about a foot high, and asked Mrs. Root to cook them like spinach. She objected to the weedy stalk, but I told her they were all right. Well, like our friend in the above I decided alfalfa really does make the finest kind of greens; but Mrs. Root strongly objected to the stalks and stems; so the next time I just stripped off the leaves along with the tender "ends of the plant," as mentioned in the above, and they were just fine. When I was in California many of the friends there told me they kept their cows and horses in good condition with just alfalfa and nothing else—no grain of any sort; and I think (of course without an extended trial) that alfalfa cooked as above would largely take the place of corn, wheat, or oats for human food.

After testing the alfalfa it occurred to me that the rank shoots of sweet clover growing close by would make good greens in a like manner, altho I was pretty sure beforehand the bitter taste of the cumarine might be an objection until we "acquired the habit," just as the cows and horses object to it at first. Well, Mrs. Root did object right away to the strong clover taste; but I ate the whole dishful without a bit of trouble; and I am not sure but I shall eventually get to like the sweet-clover taste just as the horses and cattle do.

Well, now, dear friends, if our grains get to be so high-priced that we cannot afford to buy them, especially wheat, let us have some alfalfa or sweet clover growing near by, and make another and perhaps a far more important "short cut from producer to consumer." Very likely alfalfa and sweet clover will require that we select the tender shoots when the plant makes its first start in the spring.

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[*] I clip as follows from the coal company's circular: Claims he promised man from whom he got idea years ago to keep it secret, and that may account for fact neighbors reached by us by telephone had never seen pen in actual operation.

TEMPERANCE

NOT ONLY BOOZE BUT CIGARETTES.

It affords me great pleasure to find the clipping below in the *Country Gentleman,* particularly because they not only recommend using our ground for good and useful purposes, but for using the ground also where we have been growing tobacco for something that builds up humanity instead of tearing it down.

EXIT J. BARLEYCORN AND L. NICOTINE.

The movement to increase food crops may appear to be inconsistent with the policy of maintaining fertility by keeping down to the minimum the sales of grain from the farm. We have been urging farmers not to sell grain, but to conserve the fertility in it by feeding it to livestock as far as possible. In this year of unusual need, however, it would seem wise to draw upon our savings fund, and, for one year at least, grow grains principally for market. The shortage in the number of hogs and beef cattle will make more grain available for market. The proposal to close the breweries in order to conserve for a food reserve the grain that they would use is also timely. In wartime John Barleycorn is a poor ally.

Farmers in the Southern States are being advised to plant food crops in addition to cotton. Tho we must supply the world's needs for cotton goods, Southern farms should not overlook the Feed-Yourself idea.

It wouldn't be a bad idea if more tobacco-growers agreed with the Wisconsin farmer who wrote to his experiment station that he was going to put his tobacco lands into grain because he felt it his duty to grow crops for food.

In an emergency like this it is worth while to seat John Barleycorn on the toboggan with My Lady Nicotine and give them a good swift push!

"ONE OF THE BLACKEST SPOTS ON OUR AMERICAN GOVERNMENT."

The clipping below is from the Cleveland *Plain Dealer* in regard to a sermon preached by Billy Sunday in New York:

"I'll live, I hope, to preach the funeral oration over booze in the United States. But if I die before that time I guess the brewers and distillers will run special excursion trains to my funeral—they'll be so glad I'm out of their way."

The evangelist quoted statistics to prove the superiority of conditions in the states which have prohibition. For instance:

"Seventy-five per cent of our idiots came from intemperate parents. There are more insane people in the United States than students in the universities and colleges. In Kansas there are eighty-one counties without an insane man or woman.

"There are fifty-four counties that have no feeble-minded. Eighty per cent of the paupers are whisky-made paupers. In Kansas there is only one pauper to every 3000 of the population. There are thirty-eight counties without a pauper; there are eighteen counties which do not even own a farm for the poor; there are only 600 paupers in the state.

"Ninety per cent of our adult criminals are drinking men, and committed their crimes while under the influence of booze.

"In 1914 there were sixty-five counties in Kansas with no prisoners in their jails. In some counties they have not called a grand jury to try a charge in ten years.

"The people have over $200,000,000 on deposit in the banks. The death rate is the smallest in the world, seven out of every 1000 of the population.

"In Massachusetts in ten years the yearly average of crime has been 32,639 cases, and 31,978 have been caused by drink. The Chicago *Tribune* kept track of the number of murders committed in the saloons in ten years. The number was 53,436.

"The saloon is the appalling source of misery, pauperism, and crime. It is the source of three-fourths of all the crime, thus it is the source of three-fourths of all the taxation necessary to prosecute the criminals and care for them after they are in prison. To license such an incarnate fiend of hell is one of the blackest spots on the American government."

I wish to call particular attention to the closing sentence in the clipping above. It has been my opinion for a long while that one of the main reasons, if not *the* reason, that God does not hear the prayers of his people and give us peace is because of the awful inconsistency of having our nation in partnership with this "incarnate fiend of hell," as Billy Sunday terms the traffic.

GIVING GRAIN TO THE CHICKENS INSTEAD OF LETTING THE BREWERS HAVE IT.

The booze business seems to be getting it from all directions just now. The clipping below comes from the *American Poultry Journal*:

The grain now used annually in the United States for the manufacture of "booze," if used in poultry husbandry, could, in six months, be made to produce not less than five hundred million pounds of wholesome poultry meat or seven billion two hundred million eggs. Think that over next time you are sopping up beer or sipping cocktails, while discussing the food situation. Also, consider the improvement in our poultry shows if the "booze annex" were cut out.

I hope the government will stop the making of beer and whisky, at least during the war. What folly it is to use millions of bushels of grain in the making of stuff which brings nothing but misery and sorrow and suffering into the world! It looks mightly inconsistent to urge us to raise more grain and at the same time allow it to be used in the manufacture of intoxicating liquors.

BREAD OR BOOZE—WHICH SHALL IT BE?

Below is what the *Rural New-Yorker* says:

> This proposition of saving for bread-making the grain now used in making intoxicating liquor has taken right hold of the public. Congress will undoubtedly frame some sort of law for saving this waste. Why not? Can any one give a single economic reason why, when a good share of the world is worrying over the future food supply, great quantities of bread-making material should be made into "booze"? The liquor-dealers usually say that temperance advocates are fanatics with unreasonable arguments. Yet, what could be more reasonable than the economic argument for the use of grain for bread-making with famine in sight?

"BREAD WE MUST HAVE, NOT WHISKY, TO WIN THIS WAR."

From the *Methodist Temperance Board* we clip the following, which to me is an excellent example of boiled-down common sense. One thing, and only one, is needful.

> Senators talk about wanting a thoro understanding of the matter. There is nothing to understand except one thing; and that is, that bread will help us win this war more than whisky. * * * We must have bread to win the war, but do not have to have whisky to win. That is all there is to it.—Senator H. L. Myers, of Montana.

WHO'S WHO IN APICULTURE

State	Beekeeping taught in Agr. College	Net Weight Law?	Foul-brood Law?	State Inspector or Deputy Name Address	Sec. or Pres. State Ass'n Name Address
Alabama					
Arizona	Yes	Yes	Yes	J. P. Ivy, Phoenix	Geo. M. Frizzell, Tempe
Arkansas					J. L. Pelham, Hutchinson
California	Yes	Yes	Yes	County System	F. Fay Lewis, (No.) Oak Park M. C. Richter, Santa Barbara
Colorado			Yes	Wesley Foster, Boulder	S. Francis, Longmont
Connecticut		Yes	Yes	H. W. Coley, Westport A. W. Yates, Hartford	L. Wayne Adams, Hartford
Delaware					
Florida		Yes			
Georgia		Yes			J. J. Wilder, Cordele
Idaho	Yes		Yes	Guy Graham, Boise	R. D. Bradshaw, Notus
Illinois			Yes	A. L. Kildow, Putnam	Jas. A. Stone, Springfield
Indiana		Yes*	Yes	Frank Wallace, Indianapolis	Geo. W. Williams, Redkey
Iowa	Yes	Yes*	Yes	F. C. Pellett, Atlantic	Hamlin B. Miller, Marshalltown
Kansas	Yes		Yes	Geo.A. Dean, Manhattan (No.) S. J. Hunter, Lawrence (So.)	O. A. Keene, Topeka
Kentucky			Yes	County System	Prof. H. Garman, Lexington, State Exp. Sta.
Louisiana		Yes			L. T. Rogers, Shreveport
Maine		Yes			O. B. Griffin, Caribou
Maryland	Yes			G. H. Cole, College Park	E. N. Cory, College Park
Massachusetts	Yes	Yes	Yes	Dr. B. N. Gates, Amherst	Thos. J. Hawkins (E.) Everett Philip S. Crichton, Boston
Michigan	Yes	Yes	Yes	B. F. Kindig, E. Lansing	David Running, Filion
Minnesota	Yes		Yes	C. D. Blaker, Minneapolis	L. V. France, St. Paul
Mississippi					
Missouri	Yes		Yes	M. E. Darby, Springfield	Austin D. Wolf, Parkville
Montana	Yes	Yes			Frank C. Clift, Huntley
Nebraska	Yes	Yes	Yes	County System	
Nevada		Yes			
New Hampshire		Yes			
New Jersey	Yes		Yes	E. G. Carr, New Egypt	E. G. Carr, New Egypt
New Mexico			Yes	County System	Henry B. Barron, Hagerman
New York	Yes	Yes	Yes	Com. of Agri., Albany	F. Greiner, Naples
North Carolina					S. S. Stabler, Salisbury
North Dakota		Yes			
Ohio	Yes		Yes	N. E. Shaw, Columbus	Dr. Ernest Kohn, Grover Hill
Oklahoma	Yes		Yes	Prof. C. E. Sanborn, Stillwater	F. W. VanDeMark, Stillwater
Oregon	Yes				P. S. Farrell, New Plymouth, Ida.
Pennsylvania	Yes	Yes	Yes	J. G. Sanders, Harrisburg	H. C. Klinger, Liverpool
Rhode Island			Yes	A. C. Miller, Providence	Gardner B. Willis, Providence
South Carolina					
South Dakota		Yes	Yes?	District System	L. A. Syverud, Canton
Tennessee	Yes	Yes	Yes	J. S. Ward, Nashville	J. M. Buchanan, Franklin
Texas	Yes		Yes	F. B. Paddock, College Sta.	Louis Scholl, New Braunfels
Utah		Yes	Yes	County System	Joah Collier, Vernol
Vermont			Yes	J. E. Crane, Middlebury	J. E. Crane, Middlebury
Virginia					
Washington			Yes	County System	J. B. Ramage, No. Yakima
West Virginia		Yes	Yes	W. E. Rumsey, Morgantown	Will C.Griffith, Elm Grove, W.Va.
Wisconsin	Yes	Yes	Yes	N. E. France, Platteville	Gus Ditmer, Augusta
Wyoming		Yes	Yes	County System	
Ontario, Can.	Yes		Yes	Morley Pettit, Guelph	Morley Pettit, Guelph

* Comb honey excepted.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

Amber honey in new 60-lb. cans.
Van Wyngarden Bros., Hebron, Indiana.

FOR SALE.—To the highest bidder, a limited quantity of Michigan's best white extracted honey, in 60-pound tins.
A. G. Woodman Co., Grand Rapids, Mich.

FOR SALE.—Raspberry, basswood, No. 1 white comb, $3.00 per case; fancy, $3.25; 24 Danz. sections to case, extracted, 120-lb. cases, 15 cts. per lb.
W. A. Latshaw Co., Clarion, Mich.

HONEY AND WAX WANTED

WANTED.—Section honey.
J. E. Harris, Morristown, Tenn.

WANTED.—Carload or less extracted honey; also wax. W. C. Morris, Yonkers, N. Y.

WANTED.—Comb and extracted honey at jobbing prices. Nat. Honey-Prod. Asso., Kansas City, Mo.

WANTED.—Extracted light and amber honey. Give quantity and lowest cash price; can use good clean beeswax. D. H. Welch, Racine, Wis.

WANTED TO BUY a quantity of dark and amber honey for baking purposes.
A. G. Woodman Co., Grand Rapids, Mich.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—Extracted light and amber honey of good body and flavor from any state in the Union. Send sample with lowest cash price.
M. E. Eggers, Eau Claire, Wis.

WANTED.—White and light amber extracted honey, in any quantity. White clover and raspberry preferred.
I. J. Stringham, 105 Park Place, New York.

WANTED.—Carload or less extracted honey. State price and quantity. If needed we can supply tins or barrels for your crop.
Hoffman & Hauck, Richmond Hill, N. Y.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

HONEY LABELS that will tempt the buyer to purchase your honey. Neat, attractive labels at right prices. Samples Free.
Liberty Pub. Co., Sta. D, Box 4-E, Cleveland, Ohio.

HONEY LABELS. — Most attractive designs. Catalog free. Eastern Label Co., Clintonville, Ct.

FOR SALE.—Golden-seal seed $1.25 per thousand. S. Pitts, Stronghurst, Ill.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE CHEAP.—Forty or fifty comb-supers for eight-frame L. hives. W. L. Lively, Glendale, Ariz.

FOR SALE.—New 165-lb. honey kegs at 65c each, f. o. b. factory. N. L. Stevens, Venice Center, N. Y.

FOR SALE.—Second hand Root hives and equipment. Write for list and price.
W. J. Corlett, 107 Arlington Ave., Clifton, N. J.

THE PERFECT Bee-Frame Lifter. For descriptive circular address
Ferd C. Ross, Box 194, Onawa, Iowa.

We carry a complete line of bee-supplies. Ask for our bee-supply catalog. Let us quote you on your requirements. Deroy Taylor Co., Newark, N.Y.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont., (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; Gleanings and all kinds of bee literature. Get the best. Catalog free.

300 gal. wire screens, nearly new, for 8-frame hives; 1 canvas and frame, 12 x 24; summer house; has 2½ wide screened space all around to be opened at will; just the thing for out-apiaries or camping. Used 3 months. F. W. Morgan, DeLand, Ill.

WANTS AND EXCHANGES

Would exchange a new Barker cultivator for bees and queens. E. H. Hafford, Fennville, Mich.

Wax and old combs wanted for cash or to make up on shares, beekeeper to factory direct.
J. J. Angus, Grand Haven, Mich.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

FOR SALE OR EXCHANGE, one Remington typewriter No. 6. Will take 2 dozen queens or $15.00 in cash. Oscar Mayeux, Hamburg, La.

Wanted to exchange a 32 cal. Remington rifle for a foundation mill, green-bone cutter, Barnes make saw or a pair of field glasses.
Wm. S. Ammon, 15 So. Front St., Reading, Pa.

WANTED.—Shipments of old comb and cappings, for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

GOATS

MILCH GOATS.—"Profit and Pleasure in Goat-Keeping," pronounced by experts the best goat book, regardless of price; profusely illustrated; by mail, 35 cents. Fred C. Lounsbury, Plainfield, N. J.

FOR SALE.—Seven-eighths Toggenburg, milking two quarts daily. Female kid. Both $30.
F. L. Shaw, 109 Princeton Ave., Elyria, Ohio.

FOR SALE.—One grade Toggenburg goat, good marking, two years old, fresh in May; good milker; price $20.00, F. O. B.
F. M. Haynes, Rt. 18, Farmland, Ind.

PATENTS

PATENTS SECURED or all fees returned. Patents sold free. Read "Patent Sales Dep." of our 190-page Guide Book, FREE. Send data for actual free search. E.E. Vrooman & Co., 834 F, Wash., D.C.

REAL ESTATE

FOR SALE—By member of this Association, house and lot, honey-house, 500 colonies of bees with first-class equipment. Live railroad town in alfalfa belt of southwest Idaho. Offered for sale on account of ill health. Idaho-Oregon Honey-producers' Ass'n, Caldwell, Idaho.

FOR SALE.—House 30 x 30, and 6 acres hillside land. Cellar, 30 x 30, for bees and extracting. Best location possible; 14,000 lbs. last year from 130 colonies. Will sell 50 or 100 colonies bees also. No disease. Other business cause for moving.
L. W. Maxwell, Turkey River, Iowa.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free. C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

FARMING IS PLEASANT and profitable in Virginia and North Carolina. Good land, $15 acre up, easy payments. Climate, schools, churches, roads, and neighbors that make life worth living. Close to markets. Fruit, dairy, and stock farms pay big here. Farm lists, magazine and interesting literature free. Address F. H. LaBaume, Agr'l Agt. N. & W. Ry., 246 N. & W. Bldg., Roanoke, Va.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Cortlandt St., New York.

When it's GOLDENS it's PHELPS. Try one and be convinced.

FOR SALE.—Italian queens. See large advertisement elsewhere. H. B. Murray, Liberty, N. C.

Italian bees and queens. Send for circular.
Ira C. Smith, Dundee, Oregon.

FOR SALE.—Full colonies fine Italian bees, low price. L. H. Robey, Worthington, W. Va.

FOR SALE.—Golden Italian queens. Untested queens 60c each. J. F. Michael, Winchester, Ind.

Queens for July and later delivery. No more rush orders till July 1st.
J. E. Wing, 155 Schiele Ave., San Jose, Calif.

Untested Italian queens for sale—1, $1.00; 3, $2.75; 6, $5.00; 12, $9.00. Satisfaction guaranteed. F. L. Johnson, Mt. Airy, N. C.

QUEENS OF SUPERIOR QUALITY.—Untested, 75c each, $8.00 per doz.; select untested, 90c each, $9.00 per doz.; select tested, $1.50 each, $15.00 per doz.; extra select breeder, $5.00.
H. N. Major, South Wales, N. Y.

FINE ITALIAN QUEENS.—Can furnish select stock at following prices: Single queen, $1.00; 2 queens, $1.75; 3 queens, $2.50; 12 queens, $9.00; 6 or more at dozen rates. No disease. Safe arrival. Can begin to furnish about May 15. Give me a trial order. Chas. M. Darrow, Star Route, Milo, Mo.

Phelps' queens will please you. Try them and you will be convinced.

FOR SALE.—E. E. Mott's strain of Italian queens 75c each, $8.00 per doz. Send for list.
Earl W. Mott, Glenwood, Mich.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

Tested leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Vigorous, prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing. A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Italian queens, THE HONEY-GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

"She-suits-me" bright Italian queens; $1 by return mail till Oct. 1.
Allen Latham, Norwichtown, Conn.

Leather-colored 3-band Italian bees $1.25 per lb. Tested queens, $1.00; untested, 70 cts. each.
C. H. Cobb, Belleville, Ark.

BARGAIN.—Italian queens, $1.00; 2-frame nuclei with queen, $4.00.
Orville E. Tulip, 56 Lawrence St., Arlington, R. I.

Business first queens. Select untested, $1.00 each; $9.00 a dozen; no disease. Price list free.
M. F. Perry, Bradentown, Fla.

Black queens. Tested, $1.00; untested, 75 cts. Safe delivery guaranteed.
Frank L. Sanborn, Denmark, Me.

Finest Italian queens, June 1 to November, $1.00; 6 for $5.00; my circular gives good methods. Ask for one.
J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

FOR SALE.—Bright Italian queens at 65 cts. each; $6.50 per doz.; ready April 15. Safe arrival and satisfaction guaranteed.
T. J. Talley, Rt. 3, Greenville, Ala.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each.
Henry S. Bohon, Rt. 3, box 212, Roanoke, Va.

Golden and three-banded Italian queens for July, Aug., and Sept. Now, only 55 cents each, 6 for $3.00, 12 for $6.00, virgins 30 cts.
G. H. Merrill, Pickens, S. C.

FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, $1.00; tested, $2.00.
Wallace R. Beaver, Lincoln, Ill.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1; 6 for $5. Wm. S. Barnett, Barnetts, Va.

Queens, Queens, Queens. We are better prepared than ever to supply you. Untested, 75c each; tested, $1.25 each; select tested, $2.00 each. See our big illustrated ad on first leaf of this journal.
W. D. Achord, Fitzpatrick, Ala.

GOLDEN ITALIAN QUEENS!!! From the best stock; they produce Golden bees unexcelled as honey-gatherers; very gentle; no disease. Select tested, $1.25; tested, $1.00; select untested, 75c; untested, 65c; virgins, 35c. Special price on one-half dozen or more. Golden Queen Apiaries, R. Kornegay, Jr., Prop., Mt. Olive, N. C.

Bright Italian queens for sale at 60 cts. each, $6.00 per doz; virgins, 25 cts. each. Safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

FOR SALE.—Italian bees and queens. One-pound, two-pound, and three-pound packages, with queens; also on frames and full colonies. Ask for our price list, free beginner's book, and bee-supply catalog.
Deroy Taylor Co., Newark, N. Y.

My bright Italian queens will be ready to ship April 1, at 60 cts. each: virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, $1.00; 6, $5.00; tested, $2.00; breeders, $5.00 to $10.00.
J. B. Brockwell, Barnetts, Va.

GOLDENS THAT ARE TRUE TO NAME.—One race only, unt., each, 75 cts.; 6, $4.25; 12, $8.00. For larger lots write for prices. Tested, $1.50; S. T., $2.00; breeders, $5.00 and $10.00.
Garden City Apiaries, San Jose, Cal.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

FOR SALE.—Three-band Italian queens from best honey-gathering strains obtainable. Untested queens, $1.00; 6, $5.00; 12, $9.00; tested queens, $1.50 each; 6, $8.00.
Robt. B. Spicer, Wharton, N. J.

None but the best Queens are sent out by us—three-band Italians that are guaranteed to give satisfaction. Untested queens, 75c; $8.00 per doz.; tested, $1.00 each. No disease. Orders filled promptly. J. W. K. Shaw & Co., Loreauville, La.

QUEENS OF QUALITY.—Our Hand - Moore strain of three-banded Italians are beautiful, and good honey-gatherers. Bred strictly for business. Untested, 75c; half doz., $4.00; select, $1.00.
W. A. Latshaw Co., Clarion, Mich.

Golden Italian queens that produce gentle golden bees; good honey-gatherers; no foul brood. Select tested, $1.25; tested, $1.00; untested, 65 cts.; 6, $3.75; 12, $7.00. No nuclei or bees for sale.
D. T. Gaster, Rt. 2, Randleman, N. C.

FOR SALE.—195 colonies of bees and complete outfit. Honey flora includes orange, palmetto, sea-grape, mangrove, and fall bloom. Mangrove yields until Aug. 1st. Will sacrifice if sold soon.
A. E. Ault, Bradentown, Fla.

My 3-banded Italian queens will be ready to ship April 1. Write for prices of bees and queens by the pound. I have few more hundred pounds of bees for sale. Safe arrival and satisfaction guaranteed.
J. A. Jones, Greenville, Ala.

ENERGETIC HONEY-GATHERERS.—Best 3-banded Italian bees and queens. Untested, 75c; tested, $1.25. Bees, $1.25 per pound. All orders filled promptly or your money refunded. Safe delivery guaranteed.
Gila Valley Apiaries, Duncan, Ariz.

QUEENS.—Improved three-banded Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, $8.00; select, $1.00; dozen, $10.00; tested queens, $1.25 each; dozen, $12.00. Safe arrival and satisfaction guaranteed.
H. C. Clemons, Rt. 3, Williamstown, Ky.

FOR SALE.—Because of change in business I must sell my 225 colonies of high-bred Italians in ten-frame hives, equipped for extracted and comb honey. Unlimited alfalfa pasture, and home market for all. Splendid opportunity for beeman in this new country. A. W. F. Lee, Cordell, Okla.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; dozen, $9.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Son, Wilcox St., Binghamton, N. Y.

North Carolina-bred Italian queens of Dr. C. C. Miller's famous strain of three-banded Italian bees; July 1 until Oct. 1, untested, 75 cts.; per doz., $8.00; tested, $1.00; doz., $11.00; select tested, $1.50. Safe arrival and satisfaction guaranteed.
L. Parker, Rt. 2. Benson, N. C.

My choice northern-bred Italian queens are hardy, vigorous, and prolific. May and June, untested, $1.50; select unt., $2.00; tested, $3.00; after July 1, unt., $1.00; select unt., $1.25; tested, $2.00; select tested, $2.50. Free circular.
F. L. Barber, Lowville, N. Y.

Golden Italian queens of the quality you need, bred strictly to produce Golden bees that are real workers. Untested, one, 75 cts.; 6, $4.25; 12, $8.25; 50 or more, 60 cts. each. Prompt delivery and satisfaction guaranteed.
L. J. Pfeiffer, Rt. A, Box 219, Los Gatos, Cal.

Golden Italian queens from a breeder that was a first-premium winner at Illinois State Fair in 1916; untested, 75 cts.; six for $4.25; doz., $8.00; select untested, $1.00; 6 for $5.00; 12 for $9.00; tested, $1.50; 6 for $8.00.
A. O. Heinzel, Rt. 3, Lincoln, Ill.

Golden Italian Queens, bred strictly for business that produce a strong race of honey-gatherers; untested, each, 75c; 6, $4.25; 12, $8.00; for larger lots write for prices. Tested, each, $1.50. Prompt service and satisfaction guaranteed.
L. J. Dunn, 59 Broadway Ave., San Jose, Cal.

ITALIAN QUEENS, northern-bred, three-banded, highest grade; select untested, guaranteed; queen and drone mothers are chosen from colonies noted for honey production, hardiness, prolificness, gentleness, and perfect markings. Price, one, $1.00; 12, $9.00; 50, $30.00. Send for circular.
J. H. Haughey, Berrien Springs, Michigan.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money returned by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

FOR SALE.—200 colonies of bees, 150 hives full of combs, 100 new hives; all combs built on full sheets of foundation and wired frames. Gasoline-engine, and saws for hive-making; 12 x 14 corrugated-iron honey-house; foundation-mill, extractor and supers, etc. Also 117 acres of unimproved land, all located in one of the best alfalfa-seed-growing sections in northern California. A note with approved surety will take one or both. Reasons for selling. I. C. Bachtel, Lake City, Modoc Co., Cal.

I am again ready to mail queens of my strain of three-band Italians. H. C. Klinger, Sec.-Treas., Pa. State Beekeepers' Assoc. says: "Your queens gave me good results; are prolific; the bees gentle and excellent workers. I am well pleased with them." May 5, 1917. Prices untested, each, $1.00; 12, $9.00. Beekeepers of Pennsylvania, New York, and New England states can save on time and express charges on nuclei and bees by pound from here. Price list free. Yours for more honey.
J. B. Hollopeter, Queen breeder, Rockton, Pa.

Golden 3-band Italian and Carniolan queens: Virgin: 1, 50c; 6, $2.50; 12, $4.00; 100, $25.00. Untested: 1, 75c; 6, $4.20; 12, $7.80; 100, $60.00. Select untested: 1, 85c; 6, $4.80; 12, $9.00; 100, $70.00. Tested: 1, $1.00; 6, $5.40; 12, $10.20; 100, $80.00. Select tested: 1, $1.25; 12, $13.80; 100, $100. Breeders: $3.00 each. Bees in combless packages: ½ lb., 75c; 1 lb., $1.25; 2 lbs., $2.25. Nuclei: 1-frame, $1.25; 2 frames, $2.25; 3 frames, $3.00. Add price of queens wanted. We guarantee safe arrival and no disease.
C. B. Bankston, Buffalo, Tex.

50 Tested Italian Queens, $1.00 each; warranted queens, 75 cts. Satisfaction guaranteed.
Geo. A. Hummer, Prairie Point, Miss.

Queens of my own and Dr. C. C. Miller's 3-banded select stock the rest of this season, 75 cts. each; $65.00 per 100; tested, $1.50 each; $15.00 per dozen; breeders, $5.00 and $10.00. A fine breeder sent on two frames of brood in nuclei, $10.00.
Curd Walker, Jellico, Tenn.

I think so much of my Walker queens and bees that I have been able to induce my friend Mr. Walter Hall to try one. I am quite sure he will find them as good as I recommend. I have in my apiary queens from four different breeders of queens, but the Walker beats them all. When I want more queens yours are good enough for me even if the price is a little steep. J. M. Meadors, Dorton, Tenn.

HELP WANTED

WANTED.—Man to work with bees, season 1917. State age, experience, and wages.
The Rocky Mountain Bee Co., Billings, Montana.

WANTED.—Industrious young man, fast worker, as a student helper in our large bee business for 1917 season. Will give results of long experience, and board and small wages. Give age, weight, experience, and wages in first letter.
W. A. Latshaw Co., Clarion, Mich.

WANTED.—Young man with a little experience, fast willing worker, as student helper with our 1000 colonies. Crop for past two years, 6 carloads. Will give results of our long experience and small wages; every chance to learn. Give age, height, weight, experience, and wages, *all* in first letter, or expect no answer. E. F. Atwater, Meridian, Idaho.

WANTED.—From Sept. 1 to April able-bodied young man who has had some experience with bees to help work in apiary in New Zealand. State wages wanted, with board furnished; also send references and description of self in first letter. Write J. M. care GLEANINGS. F—4214

WANTED by an experienced apiarist a partner to go south and rear queens and bees for the northern market. We understand queen-rearing, also production of both comb and extracted honey. Would take a position with some large apiarist.
C. Witham, Syracuse, N. Y.

WANTED a good single man 48 or 50 years old who understands bees and farming. Address Mrs. M. Catlin Morse, Owego, N. Y., South Side.

TRADE NOTES

ADVANCING PRICES.

Because of very sharp advances in lumber of all kinds entering into the manufacture of hives and supplies we are obliged to withdraw all prices listed in our catalog and price lists. We are working on new price schedules, and hope to have them in print by Aug. 1. We have quite an accumulation of unfilled orders for which we are making goods as rapidly as possible, and we ought to be caught up soon. On new business received, pending the issue of revised prices we will make prices as close as we can. Advances will be from 10 to 20 per cent. Present prices on most kinds of lumber which we use are forty to fifty per cent higher than they were a year ago, and prices continue to advance, so it is impossible to tell where the end will be.

BARGAIN IN SHIPPING CASES.

Simultaneous with announcement of an advance in all articles made of wood, including shipping-cases we have some old stock of shipping-cases holding twelve and sixteen sections which we are closing out at bargain prices. We not only have a quantity of these at Medina, but also at various branches. These are offered K. D., at $8.00 to $10.00 per 100 while they last. Let us know for what size of section you can use them, and the quantity, and we will advise if we have the size wanted. We have the largest stock fitted to the 4¼ x 1½ section.

SHIPPING-CASES NAILED UP.

We have an accumulation of nailed cases used once, but good to use again, which we are selling at $10.00 to $12.00 per 100. We have the largest stock for 24 4¼ x 1⅞ sections, but can supply some other sizes. If interested, write us, naming quantity wanted and size of section to be cased.

60-POUND CANS FOR HONEY.

We have in stock at Medina for shipment as needed five carloads of 60-pound tin cans and 2 cars of friction-top pails chiefly 5 and 10 pound. Until further notice we offer the 60-lb. cans at the following prices. Cans only, without boxes, tied 9 in a bundle, at $3.60; weight, 24 lbs.,; 50 in a crate, $20.00; weight, 190 lbs.; 2 in a box at $1.25, or 10 boxes, $12.00; 50 boxes or more, at $1.10.

HONEY-BARRELS, SECOND-HAND.

We have accumulated a number of good empty honey-barrels which will serve a good purpose for use again. We offer these as follows:

6 30-gal. bbls. of cypress at 75 cts. each.
6 50-gal. bbls. of soft wood at $1.00 each.
7 50-gal. bbls. of oak at $1.25 each.

While barrels are somewhat cheaper than cans at present prices they are not so convenient to empty, especially after the honey granulates. The demand for tin in packing perishable food products is so great that some may be forced to use barrels in packing their honey.

THE A. I. ROOT Co., Medina, O.

Special Notices by A. I. Root

POTATOES, AND THEIR PROMINENCE IN THIS ISSUE.

I hold in my hand the first new potato of this neighborhood this 22d day of June. By the way, friends, perhaps you may think that on account of old age, the *war*, etc., I never laugh nowadays. Well, the *Plain Dealer*, in speaking of my favorite text relative to the good woman whose "price is far above rubies," suggests that we might put it just now, "Her price is far above 'potatoes.'" *Potatoes*, more precious than rubies! Do you wonder that I laughed until it "began to hurt"?

THE STORY OF RIGBY FARM; HOW JACOB M'QUEEN TURNED CLAY HILLS INTO A GARDEN.

The above is the title of a little pamphlet put out by Jacob McQueen, of Baltic, Ohio. Jacob is the son of a veteran beekeeper who was in close touch with GLEANINGS when it was first started. It has been said of me that I ran away from *my* funeral on a bicycle, and the funeral has not caught up with me yet. Well, Jacob was told by the doctors that he might live a year, but he ran away from *his* funeral by experimenting with soy beans and nitro-bacteria. His work differs from my potato story in this issue inasmuch as it has the indorsement of our Ohio Experiment Station and experienced veterans in agriculture. In fact, he has been in close touch with the Station thru all his work. His preparation for inoculating legumes is different from that on the market in the fact that it does not need to be "corked up" nor to be used all up when you open the bottle. In fact, it is a dry powder. He says soy beans, with suitable weather, will show the truth of his statement *in just ten days*. Send and get his twenty-page pamphlet; and if you are anything like myself you will not lay it down until you have read the whole 20 pages. I paid him a visit June 15, and drank of the beautiful spring that was a large factor in restoring him to health, and also rambled over the most beautiful farm and farm home, *to my notion*, I ever met in my life.

The booklet is sent free of charge, as it advertises his bacteria; and for 10 cents he will send you a sample of the inoculated soy beans that should show the bacteria in ten days after planting.

See his advertisement in this issue.

SPECIAL NOTICE TO ALL BEEKEEPERS IN WISCONSIN, ILLINOIS, INDIANA, AND MICHIGAN.

At the last meeting of the Chicago Northwestern Association a committee was appointed to recommend prices for honey, wholesale and retail. The committee wants the name and address of every beekeeper in the above states, who has ten or more colonies of bees, for a mailing-list. We expect to send out three letters about July 15, Sept. 15, and Nov. 15, provided we have sufficient funds. Hurry up and send in your name and the names of your neighbor beekeepers; and if not a member of this association we should like to have your dues of $1.50, as we shall need all the funds we can get to send out these letters.

Any beekeeper outside of the above-mentioned states who is not a member can have these reports by sending 10 cts. to pay for printing and postage. Send all names or dues direct to the secretary.

JOHN C. BULL, Sec.
1013 Calumet Ave., Valparaiso, Ind.

The Eastern New York Beekeepers' Association will hold a field day and basket picnic under the old elm tree, at the apiary of the president, W. D. Wright, Altamont, N. Y., on Wednesday, July 25, at 10 A.M. A cordial invitation is extended to all who are interested. Bring your families.

Indian Fields N. Y. S. DAVENPORT, Sec.

BOOKS AND BULLETINS

"STATE INSPECTION WORK."—New England beekeepers may well rejoice in the fact that their state authorities are right up to the front apiculturally. Massachusetts and Connecticut have each state inspection of apiaries, and their 1916 reports are valuable.

Mr. W. E. Britton, State Entomologist, supervised the apiary work for Connecticut, aided as he was in the actual work by two able assistants, both expert beekeepers. In all of Connecticut 467 apiaries were inspected, in 96 different towns, with a total of 3898 colonies inspected. Of this total of colonies 289 were found with some form of disease, largely the European foul brood. Disease was found in every county in the state, and every year the spread of disease diminishes. Better facilities are being secured, and the work broadened and made more efficient.

In Massachusetts, while the primary object of inspection is to control disease, still the inspectors also teach methods, give object-lessons, and in every way strive to make the beemen more careful and systematic and skillful. An able corps of deputies assists. American foul brood is on the decline in that state, but 80 colonies showing any trace of it. European foul brood is also decreasing slowly, but is by far the worst foe yet of the beemen there, and 377 colonies were found infected with this disease. Dr. Gates, the State Inspector, urges resistant strains of Italian bees for this disease, and promises that a publication is soon forthcoming that will give the data on circumstances, conditions, etc., that make for "immunity to European foul brood." Dr. Gates considers the European more evasive and hence more subtle than the American type.

The 1916 report details the state work of all sorts, including disease eradication, apiary supervision, spraying, reports of wintering, exhibitions, etc. Every beeman of the state ought to have this bulletin. Every beeman of the country would do well to read it.

* * *

"HAPPY, THE LIFE OF A BEE," by Walter Flavius McCaleb—Harper and Brothers, is the title of a charming little monograph just from the press of the big book firm of Harpers, containing 120 pages of delightful imagination. It aims to do for the "kiddies" what Materlinck has done for the "Grown-ups," and we think he has succeeded. The publishers say, "A fascinating story of a bee scientifically true as to facts, and poetic as a fairy tale." I have been reading it to our youngsters and find they listen spell-bound. Even the older ones become interested in the personality of "Happy" and his faithful comrade "Crip." Poor old Crip! How his mishaps and vicissitudes do touch the heart! We notice that the author seems a beekeeper himself; but two or three points show a little variation

SHARPLES
SUCTION-FEED
CREAM SEPARATOR
The only separator that skims clean whether you turn it fast or slow. Saves $40 to $60 a year extra, due to this wonderful Suction-feed feature (the feed varies with the speed). Has other fine advantages—no discs to wash, knee-high supply tank, ball bearing, etc. Over one million users. Send for catalog. Dept. 126.
Sharples Separator Co. - West Chester, Pa.
Chicago San Francisco Portland Toronto

Books and Bulletins—Continued

from attested facts of the hive. For instance, he states that an egg can become a queen, worker, or drone. That would be true, of course, only before the egg was laid, therefore really before it was an egg, generally speaking.

Again, he makes a robber bee attack "Happy," the bee of the story, in mid air and force him to give up his load of honey in air—interesting in a tale but not quite A B C, is it, Editor Root?

Again, he makes "Happy" go out for several loads of honey before he has acted as nurse-bee or wax-producer. If we know our letters right, that is not the correct order of diversified employment in the economy of the hive. But the interest is not lessened but rather increased by the poetic licenses, for such we must call them, for the book is one charming poem in prose. Get it, all ye who can, and enjoy 120 pages of real treat.

Mott's Northern-bred Italian Queens

are hardy, prolific, gentle, and hustlers, therefore resist well disease.
Untested, 75c each; $8.00 for 12.
Sel. Tested, $1.50 each.
Virgins, 50c each; or three for $1.00.
Bees by pound.
Plans "How to Introduce Queens," and "Increase," 25c. List free.

E. E. MOTT, Glenwood, Mich.

"Our Bees are Gentle."

Nope, you won't get stung if you buy queens from us. Our bees are the hardy, leather colored, showing from three to five yellow bands. We have many letters testifying to their wintering and honey getting qualities. Price $1 each; $9 per dozen; $70 per hundred. Send for our complete price list and booklet describing our high-grade Italian bees.

Jay Smith, 1159 DeWolf St., Vincennes, Ind.

Rhode Island Northern-bred Italian

Queens, $1.00. Circular.
O. E. TULIP, ARLINGTON, RHODE ISLAND

QUEENS Select Italians; bees by the pound; nuclei. 1917 prices on request. Write
J. B. Hollopeter . . Rockton, Pennsylvania

Forehand's Queens . . . Get a good Queen

One that will keep the hive chock full of bees at all times, make the biggest yields of honey, sting less, and look the prettiest, at a medium price.

Over 25 years of select breeding has brought our queens up to a standard surpassed by none, and the superior of many. We have tried the principal races and every method known, and now we have selected the best race and method—the THREE-BAND BEES and the DOOLITTLE METHOD. We USE THE 3-BANDS —Why? Because they get results.

Dr. Miller, Roots, and Dadants use them.

Our queens are sold by many of the largest dealers in the U. S.

Louis H. Scholl (one of the largest beekeepers of the Southwest) says, "Three-band Italians have proven the best all-around-purpose bee after trying out nearly every race—not only in an experimental way while still at A. M. Col., but in our own apiaries as well." (In Beekeeper's Item.)

Untested	One,	$ .50	Six,	$3.00	Twelve,	$ 6.00
Select untested	One,	.75	Six,	4.25	Twelve,	8.00
Tested	One,	1.50	Six,	8.75	Twelve,	17.00

Write for price on larger quantities.

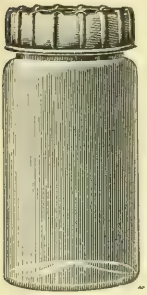
Send for circular giving general description. Mail all orders to

W. J. FOREHAND & SONS, Fort Deposit, Alabama

CLOSING OUT

Glass Jars at Special Prices to Close Out Stock

FEDERAL OR SIMPLEX JAR, 1-LB., IN CASES OF 2 DOZ. EACH.



At Medina, 59 cases, 2 doz. each, at $1.10; 6 for $6.30; $1.00 per case for lot.

At Washington, D. C., 3 bbls. of 12 doz. each, at $5.25 each; $15.00 for lot. 2 crates of 12 doz. each, $5.25 each; $10.00 for lot.

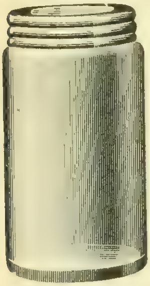
At Mechanic Falls, Me., 26 cases of 2 doz. each, at $1.10; 6 for $6.30; $1.00 per case for lot.

At St. Paul, 2 cases of 2 doz. each, at $1.10; $2.00 for lot.

At Chicago, 65 cases of 2 doz. each, at $1.10; 6 for $6.30; 30 or more at $1.00.

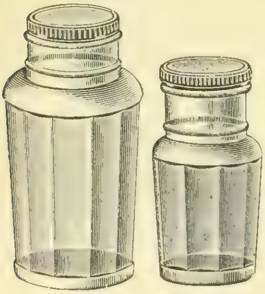
At Philadelphia, 37 cases of 2 doz. each at $1.10; 6 for $6.30; $1.00 per case for lot.

ONE-POUND ROUND JAR IN PAPER RESHIPPING CANS OF 2 DOZ. EACH.



This is the only jar we have retained in our catalog this season. We are provided with a carload of stock at Chicago, another car at St. Paul, several hundred cases at Des Moines, Iowa. We have over a thousand cases at Medina, a few hundred each at Philadelphia, New York, and Mechanic Falls, Me. This stock, while it lasts, will be sold at $1.10 per case; 6 cases $6.30; 100-case lots at $1.00 a case. New stock cannot be obtained for months after orders are placed, and prices will be much higher. Get your supply while there is stock available. In the same style of jar, 15-oz. capacity, we have at Mechanic Falls, Me., 300 cases, which we offer at the same price.

TAPER-PANEL JARS IN TWO SIZES, 1 AND ½-LB., PACKED IN CASES OF 2 DOZ. EACH.



At Medina, 7 cases, 2 doz. each, ½-lb., 90 cts. per case; $6.00 for lot.

At Washington, D. C., 19 cases, 2 doz. each, ½-lb., 90c per case; 85c lots of 6 or over. 28 cases, 2 doz. each, 1-lb., $1.10 per case; $6.30 for 6; $1.00 case for lot.

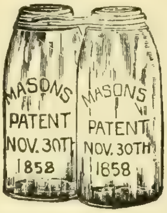
At Mechanic Falls, Me., 21 cases, 2 doz. each, 1-lb., $1.10 per case; $6.30 for 6; $1.00 case for lot.

At St. Paul, 23 cases, 2 doz. each, ½-lb., 95 cts. case; $2[illegible]00 for lot.

At Chicago, 30 cases, 2 doz. each, 1-lb., $1.10 per case; $6.30 for 6; $1.00 case for lot; 10 cases, 2 doz. each, ½ lb., 90 cts. per case; $8.50 for lot; 3½ gross in crates of octagon jars holding about 1 pound, very similar to the 1-lb. taper-panel, only straight, offered at $3.50 per gross; $10.00 for lot.

At Philadelphia, 28 cases, 2 doz. each, 1-lb., at $1.10 or $6.30 for 6, $1.00 case for lot; 84 cases, 2 doz. each, ½-lb., at 90c per case, or 85c in lots of 6.

MASON FRUIT-JARS IN THREE SIZES, PUT UP 1 DOZ. IN A CASE.



At Medina, 169 doz., 1-pint jars, 50 cts. a doz.; $5.70 for 12 doz.

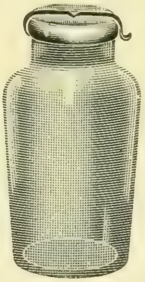
At Medina, 312 doz., 1-quart jars, 55 cts. doz.; $6.00 for 12 doz.

At Medina, 70 doz., 2-quart jars, 85 cts. a doz.; $9.00 for 12 doz.

At Mechanic Falls, Me., 10 doz., 1-pint jars, 50 cts. a doz.; $4.75 for lot. 59 doz., 1-quart jars, 55 cts. a doz.; $6.00 for 12 doz. 13 doz., 2-quart jars, 85 cts. a doz.; $9.00 for 12 doz.

At Philadelphia 20 cases of 1 doz. each, 1-pint Premium jars, at 75c per doz.; $12.00 for lot. 7 cases of 1 doz. each, ½-gal. Premium jars, at $1.10 per doz.; $7.00 for lot.

TIPTOP JARS WITH GLASS TOP, RUBBER RING, AND SPRING-TOP FASTENER.



At Medina, 8 crates, 1 gross each, 1-lb., at $5.50 per crate; 27 cases, 2 doz. each, ½-lb., at $1.00 per case; lot at 90 cts.

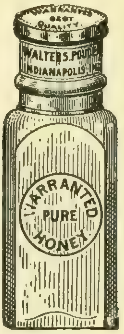
At Washington, D. C., 8 cases, 2 doz. each, ½-lb., at $1.00 per case; lot at 90 cts.; 11 cases, 2 doz. each, 1-lb., at $1.10 per case; lot at $1.00. 3 crates, 1 gross each, ½-lb., at $5.00 per crate; $14.00 for lot.

At St. Paul, 6 cases, 2 doz. each, 1-lb. $1.10 per case; $6.00 for lot.

At Chicago, 25 cases 2 doz. each, 1-lb., $1.10 per case; $25.00 for lot.

At Philadelphia, 7 crates, 1 gross each, 1 lb., at $5.50 per crate. 287 cases, 2 doz. each, 1-lb., at $1.10 per case; lot at $1.00 per case. 4 crates, one gross each, ½-lb., at $5.00 per crate; $19.00 for lot. 10 cases, 2 doz. each, ½-lb., at $1.00 per case; lot at $9.50.

SQUARE JARS WITH CORKS IN VARIOUS SIZES.



At Medina, 8 cases, 1 gross each, ½-lb., with cork, $3.75 per case. 22 cases, 2 doz. each, 1-lb., spring top, $1.10 per case. 2 cases, 6 doz. each, 2-lb., with cork, $3.75 per case. 21 cases, 2 doz. each, ¼-lb. with aluminum screw cap, 75c per case, 70c per case for lot.

At Washington, D. C., 2 gross, 1-lb. sq. jars with cork, $5.00 per gross. 7 gross, 2-lb. sq. jars with cork, $7.50 per gross. 1 gross, 1-lb. sq. jars with cork, $5.25 per gross.

At St. Paul, 18 cases, 1-lb. sq. jars with cork, $1.10 per case, $18.00 for lot. 3 cases, ¼-lb. sq. jars with cork, 75c per case, $2.00 for lot. 1 case, ½-lb. sq. jars with cork, 90c per case. 1 case, 2-lb. sq. jars with cork, $1.50 per case. 1 case, ½-lb. round Hershiser jar with aluminum cap, $1.00. 1 case, 1-lb. round Hershiser jar with aluminum cap, $1.20.

At Chicago, 6 cases, ¼-lb. sq. Hershiser jar with aluminum cap, 70c case. 8 cases, 1-lb. sq. Hershiser jar with aluminum cap, $1.20 case. 2 gross, ¼-lb. sq. Hershiser jar with aluminum cap, $3.75 gross, $7.00 for lot. 1 gross, 1-lb. sq. Hershiser jar with aluminum cap, $6.00.

At Philadelphia, 8 crates, ½ gross each, 2-lb. square jars, at $3.75 per crate or $7.50 per gross.

Send orders to Medina for stock listed as being at Medina or to the branch where stock is listed.

The A. I. Root Company, Medina, Ohio

AROUND THE OFFICE

M.-A.-O.

When you were a small and temporarily naughty child were you ever parentally led out to the woodshed and given a good spanking? Well, if you have ever had this useful experience, you know how the Man-Around-the-Office is just now feeling. Here I am in the back-end woodshed of GLEANINGS, dethroned from the position of a regular department, deprived of a pretty typographical scroll ornament at the top of my page, and otherwise humiliated. More of this "otherwise" sort, too, than you think. I suppose this is the spanking I get for having used bad language. I told 'em (the Roots) that this "language" was quoted language—not my own. But no use. They told me I could "get the heck out" (that's just exactly what they meant altho they didn't use precisely those words) and go way back and try to behave myself on the back pages among the advertisers. They'd give me one more chance back here—and then, if— — —. Yes —, IF some of you other department editors or the United States populace in general don't rise up and speak a good word for me and liberty of language pretty durned golly quick, I'll go right out thru the back cover into nowhere next time. But I ain't proud. I am sticking in for oncet again, anyway, right back here where I have been shooed to.

* * *

I wish you all knew Mr. A. I. Root as I have known him for many long years. He's all wool and a yard wide—and more. He's around the office here a good deal nowadays (when he isn't in his garden or working with his chickens), and he's a sort of traveling benediction to all of us. Every last man, woman, and child around the big shop and office have only kind thoughts and good will for "the grand old man" of the establishment. I am going to draw a pen picture of him in these columns some day—and so I won't go on in this strain any more just now, except to mention one of his characteristics that quite frequently gets him in on the butt end of a joke, when he laughs about it with the rest of us. This characteristic is that of "thinking no evil." He comes as near to measuring up to that standard as any man I have ever known. Some of his friends even say that he is pretty nearly blind to cunning evil—tho I don't think so. But let's let an incident illustrate. He's tremendously opposed to all false advertising and advertising misrepresentation. Nothing hurts him worse than to have some unworthy adver-

BANKING BY MAIL
AT 4%

First and Last

"Make money first, but make it last," is an old saying that contains a world of wisdom.

Many people find it easier to make money than to keep it. For this reason the best plan is to open a Savings Account BY MAIL in this strong institution and deposit all surplus funds.

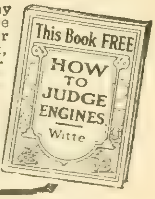
Accounts may be opened with small as well as large sums, and deposits may be easily and safely sent in the form of check, draft, money order, or the currency by registered mail.

Write for detailed information about this plan that assures complete safety and 4 per cent interest.

THE SAVINGS DEPOSIT BANK Co
MEDINA, OHIO

A.T. SPITZER, Pres.
E.R. ROOT, Vice-Pres.
E.B. SPITZER, Cashier

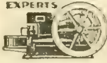
ASSETS OVER ONE MILLION DOLLARS



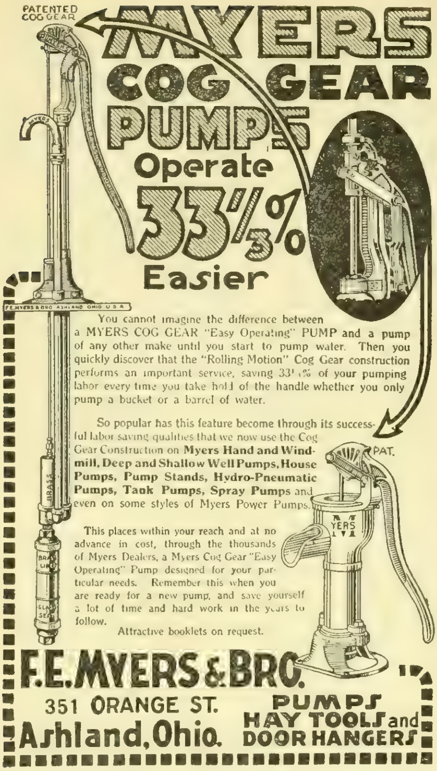
FREE Before buying any engine at any price be sure to write for my new free book, "How to Judge Engines." Tells the difference between good engines and unreliable engines. Witte Kerosene Engines 2 to 22 H-P. Sold direct. No dealers. 90 days' trial; cash or easy terms; 5-year guarantee--Ed. H. Witte

BUILT BY EXPERTS

Witte Engine Works
1930 Oakland Avenue,
Kansas City, Mo.
1930 Empire Building,
Pittsburgh, Pa.



CASH paid for butterflies insects Some $1 to $7 each Easy work Even two boys earned good money with mother's help and my pictures, descriptions, price list and simple instructions on painlessly killing, etc Send 2c stamp at once for prospectus.
SINCLAIR, Box 244, D 62, Los Angeles, Cal



PATENTED COG GEAR

MYERS COG GEAR PUMPS Operate 33⅓% Easier

F.E. MYERS & BRO. ASHLAND OHIO U.S.A.

You cannot imagine the difference between a MYERS COG GEAR "Easy Operating" PUMP and a pump of any other make until you start to pump water. Then you quickly discover that the "Rolling Motion" Cog Gear construction performs an important service, saving 33⅓% of your pumping labor every time you take hold of the handle whether you only pump a bucket or a barrel of water.

So popular has this feature become through its successful labor saving qualities that we now use the Cog Gear Construction on **Myers Hand and Windmill, Deep and Shallow Well Pumps, House Pumps, Pump Stands, Hydro-Pneumatic Pumps, Tank Pumps, Spray Pumps** and even on some styles of Myers Power Pumps.

This places within your reach and at no advance in cost, through the thousands of Myers Dealers, a Myers Cog Gear "Easy Operating" Pump designed for your particular needs. Remember this when you are ready for a new pump, and save yourself a lot of time and hard work in the years to follow.

Attractive booklets on request.

PAT.

F.E. MYERS & BRO.
351 ORANGE ST.
Ashland, Ohio.

PUMPS
HAY TOOLS and
DOOR HANGERS

VICTOR and HOME VICTOR

Multiple System
Water Heaters for
House Heating

Heats bath and kitchen boiler too. ONE STOVE AND ONE FIRE YEAR ROUND. There is nothing like it. Send for booklet.

S. V. Reeves, Mfr.
Haddonfield, N. J.

"Best" Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. **Agents wanted. Big Profits. Write for Catalog.** THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

Kill All Flies! They Spread Disease

Placed anywhere, **Daisy Fly Killer** attracts and kills all flies. Neat, clean, ornamental, convenient, and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for

Daisy Fly Killer

Sold by dealers, or 6 sent by express, prepaid, $1.00.

HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.

tiser steal into GLEANINGS' columns under false cloak—and he makes it pretty lively for the editorial force if they ever permit it, however innocently done. He's always, always, warning against the false and evil advertiser. Well, recently he has been investigating the claims of those "strong men," with great muscles and powerful chests, who advertise to make over any man physically by their gymnastic lessons and training courses — and publish their own Achilles-like busts to prove it. In the same category, Mr. Root has been searching out the advertised claims of those wonderfully shapely women who print their own pictures to prove that they can surely direct their sisters everywhere how to be just as shapely—at so much per direction. In his investigations of these much printed "fair women and brave men" he wrote to a certain famous editor in New York asking for the truth about their claims, and, in referring to one of the most widely picture-published woman-bust promoters, he said to this editor: "I have had my eye on her for years." What do you suppose he got back from that editor? Well, he got a letter larruping these men and women frauds in general; but at the very tail of the letter he also got this: "I observe that you say that you have had your eye on her for years. As for me, I am frank to say that I think the eyeing of such characters is liable to take our thoughts away from the more serious duties of life." At a distance of 500 miles, no one could quite hear that editor chuckle as he put this stinger in the tail of his pen creation; but we've heard some local chuckling around the office here by the worldly who have seen the letter. The only point is that A. I. Root thought no evil when he wrote as to having his "eye on her"—absolutely none. I am not so sure about the New York editor fellow. Don't blame him, tho, for being unable to resist the temptation of putting in the twister.

* * *

We here around the office have undergone some modification of our views regarding dandelion honey production. We have been whacked and whaled about our now strictly former views on this subject from Marengo, Illinois, to Middlebury, Vermont, and back again. So you might think we would feel disposed to be mighty reticent on the whole dandelion question. But we aren't, and want to try once more by remarking that the festive dandelion is a versatile little cuss. Experience (evolution) has taught him one especially serviceable trick in the line of self-preservation. He used to come forth in the spring as a strong man to run a race, erect his flag-pole anywhere from 6 to 15 inches high, and proceed to blossom up there and scatter his seeds from that eminence. This worked all right till the frolicsome lawn-mower came along—and then it didn't. But did the dandelion knuckle to a little bother like a lawn-mower? He did not much. He of the lawn variety just proceeded to take his blossom off the high blossom-pole, throw the pole away, and now comes up out of the ground blossom first or blossom in a hand satchel, "lays low" to the ground, and remarks as the lawn-mower passes harmlessly above him, "never touched me." Some evolutionary class to that variation to meet new conditions of environment, eh? And how durned mad it makes the lawn-mower!

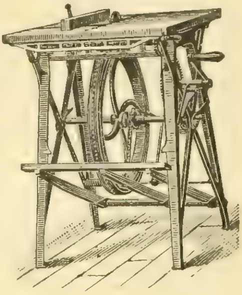
* * *

The ginseng and golden-seal raisers occasionally get tangled up in the wrong kind of roots. Just to prove it, "listen here." The A. I. Root Co. issues an annual supply catalog—many thousands of them—which is popularly called the Root catalog. That sounds just like any other kind of root catalog. So a fellow who is a root-grower or a root-collector or a root something from down in Pennsylvanina, sends along this letter to The A. I. Root Co.: "Thought I would send for your catalog on *roots*. If you people do not handle roots any more than raising them, would be pleased if you would send me the address of some reliable firms that you are acquainted with that buy

Miller's Strain
Italian Queens
By Return Mail

Northern bred from my best *Superior Breeders;* in full colonies; for business; three-banded; gentle; hustlers; winter well; not inclined to swarm; roll honey in. Untested, $1.00; 6 for $5.00; 12 for $9.00; select untested, $1.25; 6 for $6.00; 12 for $11.00. Virgins, 1 to 3 days old, 50 cts. each, at sender's risk. Safe arrival and satisfaction guaranteed in U. S. and Canada. Specialist of 20 years' experience.

Isaac F. Miller, Brookville, Pa.
Route 2



BARNES'
Hand and Foot Power Machinery

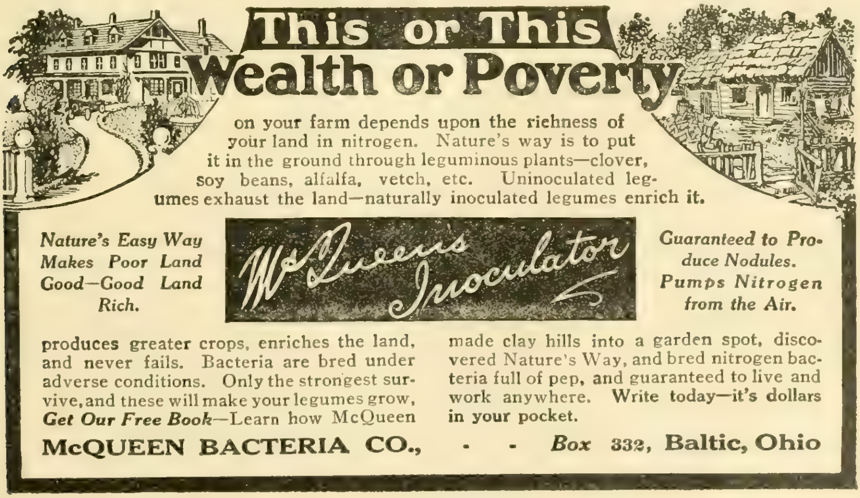
This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices. Address

W. F. & JOHN BARNES CO.
545 Ruby St
ROCKFORD, ILLINOIS

The Song of the Hour "How Would You Like to be a Slave?" Soprano solo with piano. Every American should hear it. It's great. Only 25c postpaid, silver or money order.
C. O. WEIDMAN, Medina, Ohio.



This or This
Wealth or Poverty

on your farm depends upon the richness of your land in nitrogen. Nature's way is to put it in the ground through leguminous plants—clover, soy beans, alfalfa, vetch, etc. Uninoculated legumes exhaust the land—naturally inoculated legumes enrich it.

Nature's Easy Way Makes Poor Land Good—Good Land Rich.

McQueen's Inoculator

Guaranteed to Produce Nodules. Pumps Nitrogen from the Air.

produces greater crops, enriches the land, and never fails. Bacteria are bred under adverse conditions. Only the strongest survive, and these will make your legumes grow, *Get Our Free Book*—Learn how McQueen made clay hills into a garden spot, discovered Nature's Way, and bred nitrogen bacteria full of pep, and guaranteed to live and work anywhere. Write today—it's dollars in your pocket.

McQUEEN BACTERIA CO., - - *Box* 332, Baltic, Ohio

QUEENS

Quirin's Improved Superior Italian Bees and Queens. They are Northern Bred and Hardy. . 25 Years a Queen-breeder.

PRICES	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested....	1 00	5.00	9.00	.75	4.00	7.00
Tested	1.50	8.00	15.00	1.00	5.00	9.00
Select tested ..	2.00	10.00	18.00	1.50	8.00	15.00
2-comb nuclei	2.50	14.00	25.00	2.25	12 00	22.00
3-comb nuclei .	3.50	20.00	35.00	3.25	18.00	32.00
8-frame colonies ..	6.00	30 00		5.00	25.00	
10-frame colonies .	7.50	38 00		6.50	32.00	
1-2 lb pkg. bees ...	1.50	7.00		1.00	5.00	
1-lb. pkg. bees.....	2.00	10.00		1.50	8.00	

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders, $5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above price on bees by pound, nuclei, and colonies does not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Also nuclei and colonies, if wanted before June 1, add 25 per cent to price in table.

Breeders, select tested, and tested queens can be sent out as early as weather will premit.

Send for testimonials. Orders booked now.

Reference—any large supply dealer or any bank having Dunn's reference book.

H. G. Quirin, Bellevue, Ohio

Queens of MOORE'S STRAIN of Italians

PRODUCE WORKERS

That fill the super quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Untested queens, $1.00; six, $5.00; 12, $9.00.

Select untested, $1.25; six, $6.00; 12, $11.00.

Safe arrival and satisfaction guaranteed.

Circular free.

J. P. MOORE,
Queen-breeder Route 1, MORGAN, KY.

By Return Mail

Choice
Italian Queens

Each . . . $ .75 Six $4.25
Twelve . . 8.00 Twenty-five 15.00

J. B. Hollopeter, Rockton, Pa.

Around the Office—Continued

roots." I say, isn't that getting some tangled in 'em? I wrote him that they raised Roots here till they were all over the place, but that none of us try to handle them much (rest censored).

* * *

Just to show that things are "on the move" in Russia: A few days ago, GLEANINGS received word from the publisher of the Russian bee journal that its place of publication had been removed from Petrograd to the city of Kazan. So far as I know anything about Kazan, it might just as well have been moved to Susie Ann. The point I am trying to make is that Russia for two months past has seemed to me more like an apiary where robbing had got started than anything else on the footstool.

* * *

Of course, we all had to begin. The Garden of Eden was just a beginner. But some beginners begin more than other beginners seem to have to begin—that is, they are further off before they start to begin. One of the salesmen of a big beekeepers' supply house tells me that a letter came to his department the other day asking for a price on "one family of bees and house; also quote on bees by the quart or peck." It just illustrates my wise talk about varying degrees of beginning—that's all.

* * *

A good friend of mine up at Sherburn, Minn., sends the copy of an advertisement that has run for two seasons in his local paper, that reads thus: "For Sale—Combed and strained honey.—A——. L———." My friend comments that "A. L." doesn't take GLEANINGS or he would know that honey isn't "combed." Thanks for that boost for GLEANINGS. He further says: "If combed honey should become popular, it might be well for The A. I. Root Co. to make up those old-fashioned wooden pocket-combs for either the beekeepers or bees to comb it with."

* * *

Here is an astonishing astounder that can be traced directly to the lair of R. F. Holtermann—for he said it: "Speaking of immunity reminds me that Mr. Stewart, of New York State, considers himself to be quite immune to mosquitoes. He says that in handling so many bees his blood has become so inoculated with bee-poison that any mosquito that has the audacity to bite him is instantly killed. 'At least,' ventured Mr. Stewart, 'I have never known a mosquito to come back after a second dose.'"

QUEENS

Our July, August, and September SPECIAL PRICE on untested leather-colored and Golden queens---a bargain never offered to the American beekeeper before.

Prices on 1 to 10 queens, 60 cts. each
" 11 to 25 queens, 55 cts. each
" 26 to 100 queens, 55 cts. each
" 100 to 1000 queens, 48 cts. each

Safe delivery. If not satisfied, return queens, and get your money back. The Root Company, The American Bee Journal, Dadant & Sons, any mercantile agency, and others will tell you who we are.

The Penn Company . . Penn, Miss.

Queens from Dr. C. C. Miller's Best Breeders

We have made arrangements with Dr. C. C. Miller to keep us supplied with some of his best breeders, and are rearing queens from these superior mothers that we guarantee to be as good as can be reared. These queens are not just individuals that have made a good yield; we all have some colonies that made a good showing, but all do not have a strain that holds the world's record as his does. Think of it—a whole yard of 72 colonies averaging 266 sections weighing 244 pounds. You are getting at a low price the results of fifty years of careful breeding of one of the most successful beekeepers in the world. Safe arrival and entire satisfaction guaranteed on all goods sold.

One untested Miller queen, $1.00, $11.00 per dozen. Tested, $2.00. Ex. Select Tested, $3.50. Breeders, $5.00 to $10.00 each.

One pound bees, $1.25; ten or more, $1.00 per pound. Two pounds, $2.25; ten or more, $2.00 each. One frame nuclei, $1.25; two frame, $2.25; three frame, $3.25. Add price of queen wanted. Full colonies a specialty.

The Stover Apiaries
Starkville, Miss.

QUEENS
For Sale

Red-clover 3-band Italian queens; Root's, Moore's, Davis', extra-select stock, mated with Geo. H. Hows' famous select drones. I know none better for honey-gathering, wintering, beauty, etc. I guarantee 90 per cent pure mated if queens are returned to me. Queens or money back in a reasonable time. No foul brood, no bee disease; apiaries inspected by Mr. Rea and Prof, Franklin Sherman, Jr. Mr. Rea is our bee inspector of this state.

	Price before July			After July 1st		
	1	6	12	1	6	12
Untested queen .	.75	4.00	8.00	.75	3.25	6.50
Select untested. .	1.00	4.50	8.50	.80	3.75	7.00
Tested	1.25	6.00	10.00	1.25	5.00	9.00
Select tested	1.50	8.00	13.00	1.50	6.00	10.00
Extra select tested	2.00	10.00	15.00	2.00	8.00	13.00
½ lb.bees with qn	2.00	10.00	16.00	1.75	8.00	14.00
1 lb. bees with qn	2.50	12.00	20.00	2.00	10.00	17.00

I can furnish bees in lots of 25, 50, and 100 pounds. I am in position to give prompt service this season. My bees are of a famous foul-brood-resisting strain.

H. B. Murray . . Liberty, N. C.

Queens . Queens . Queens

We are making a specialty of untested queens, and are prepared to send either large or small quantities out promptly, generally by return mail. Every queen guaranteed to be entirely satisfactory. Goldens after June 15th at the same price. We spare neither labor nor money in producing the best queens. Quality counts the most with us.

One queen, 75c; 12, $8.00; 25 to 1000, 60c each. After July 15, one, 55c; 12, 50c; 25, 45c. One pound bees, $1.25; 10 or more, $1.00 per pound. Two pounds, $2.25; 10 or more, $2.00 each. One frame nuclei, $1.25; two frame, $2.25; three frame, $3.25. Add price of queen want ed. Full colonies a specialty.

The Stover Apiaries, Starkville, Mississippi

After June 20 address will be Mayhew, Miss.

Queens Hardy, Long-lived, and Disease-resisting Queens

20 YEARS OF SELECT BREEDING GIVES US QUEENS OF HIGHEST QUALITY QUEENS FOR HONEY PRODUCTION—QUEENS OF UNUSUAL VITALITY

"There are few queens their equal and none better"

What Bees Do Headed By Our Queens

"One swarm made 185 sections of honey and another 296 sections. I am well pleased."
Kimmell, Ind. Melvin Wysong.

"Your bees averaged 150 lbs. of surplus honey each. I find them not only hustlers but also gentle."
Meredosia, Ill. Fred H. May.

"I have tried queens from several different places and like yours best of all."
Alabama, N. Y. C. O. Board.

"We are only one mile from Lake Erie, and exposed to high cold winds; in fact, this is the windiest place along the Great Lakes. Your bees were able to stand the winter with only an insignificant loss, and we would have no others. As for honey they averaged 175 pounds of extracted surplus, did not swarm, and gave an artificial increase of 30 per cent, which is as fine a record as can be had in this locality, especially when the work is done entirely by amateurs."
Name furnished by request, North East, Pa.

Price List of Golden and 3-Band Italian Queens by Return Mail.

Untested	50 cts. each,	$45.00 per 100	Tested	$1.00 each,	$ 90.00 per 100
Select untested	65 cts. each,	$50.00 per 100	Select tested	$1.25 each,	$110.00 per 100

We Guarantee Our Queens to Arrive Safely, That They are Very Resistant to European Foul Brood, and, in Fact, to Give Full and Complete Satisfaction.
Wings clipped free of charge.
Our Capacity is 1500 Queens Monthly.

M. C. BERRY & COMPANY, Hayneville, Alabama, U. S. A.

Increase Your Honey Crop

by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested each, $1; 6, $5. Tested, each $1.25; 6, $5.50. Breeders, $5.

FRED LEININGER & SON, Delphos, Ohio

SOUTHERN BEEKEEPERS

Get the Famous Root Goods Here

Veils, 65c; Smoker, 90c; Gloves, 65c pair; wire-imbedder, 35c; honey-knife, 80c; 1-lb. spool wire, 35c; medium-brood foundation, 1 to 11 lbs. 58c per lb.; 11 to 25 lbs., 56c; 50 or 100 lb. lots, 53c. Ten-fr. wood-zinc excluders, 50c each; Hoffman frames, $3.75 per 100. Honey-extractors for sale. I am paying 28c cash, 29c trade, for wax.

J. F. Archdekin, Bordlonville, Louisiana.

Immediate Shipments: Telegraph Us.

Superior Foundation

(Weed Process). Special prices on quantity lots.

Honey-cans

We are fortunate in securing several carloads. Try us for prompt service.

Old Combs

We render on shares. Our steam process removes every ounce of beeswax.

Honey Sections, Extractors

Etc. Every thing in bee supplies.

Superior Honey Company, Ogden, Utah

LOCKHART'S SILVER-GRAY CARNIOLANS

"LINE BRED" for the past 31 years. They are VERY hardy, gentle, prolific, great workers, and builders of VERY WHITE combs, and use mostly wax in place of propolis. Untested queen, $1.00; six for $5.00; dozen for $9.00. Select untested queen, $1.25; six for $6.00; dozen for $11 00. Tested queen, $2.00; six for $9 00; dozen for $15.00. Select tested, $3.00. Best breeder, $5 00. Extra select, very best we have, $10.00. Safe arrival guaranteed in United States and Canada. No foul brood here.

F. A. LOCKHART & COMPANY . . . . LAKE GEORGE, NEW YORK

Queens of Superior Quality

Select Three-banded Italian or Leather Color

All orders, no matter how large or how small, will be greatly appreciated and acknowledged the same day they are received.

Safe arrival guaranteed.

Queens' wings clipped according to your direction free of charge.

	1	12
Untested	$ .75	$ 8.00
Select untested	.90	9.00
Select tested	1.50	15.00
Extra select breeder..	5.00	

H. N. MAJOR

South Wales, New York

Bees and Queens

Full Colonies, Nuclei and Pound Packages

We have about the finest lot of bees we ever had before in our history. We have now the Wardell strain, which has been moved to Medina, and we also have our celebrated Pritchard strain, both of which have so far shown themselves to be practically immune to European foul brood. Our yard has been carefully inspected by the State Inspector and we are prepared now to furnish queens and bees in pound lots, nuclei or full colonies.

We are also able to furnish our fine strain of queens, Italians that are bred for business as well as immunity to European foul brood.

Untested Italian Queens, each..	$1.00
3 Untested Italian Queens, for...	2.75
6 Untested Italian Queens, for...	5.00
12 Untested Italian Queens, for...	9.00
25 Untested Italian Queens, each..	.70
50 Untested Italian Queens, each..	.67½
100 Untested Italian Queens, each..	.65
Select untested, each..........	$1.25
Tested, each..................	2.00
Select tested, each............	3.00
Home-bred virgin	.50
Breeding queens from $5.00 to $25.00	

We are now able to make prompt shipments from Medina, in most cases by return express. Remember that we are the pioneers in the combless packages of bees and our guarantee is very broad and liberal.

The A. I. Root Co., Medina, O.

Queens . . Queens

From a strain of Italians, wintered for thirty years in the foothills of the Adirondack Mountains out of doors. Hardy, gentle, industrious, and fine resisters of disease. $1.00 each, or $9.00 per dozen; also nuclei and full colonies.

Charles Stewart, Box 42, Johnstown, N. Y.

My Three-banded Italian Bees

After June 20th I sell 3-frame nuclei with untested queen for $3.50. Colonies in a new hive, 8-frame, $8.00. Our government urges a larger production of honey. "Get busy." Send for circular.

E. A. Leffingwell, Allen, Michigan

"Griggs Saves You Freight"

TOLEDO

is the place to order your 1917 supplies from, and GRIGGS is waiting for your order.

We are well supplied with a fine stock of Root's Goods for the following season; and if a saving of time and money means anything to you. Mr. Beeman, wherever you are, don't overlook getting our catalog and prices.

Promptness and satisfaction is our motto, whether you have one hive or 500.

HONEY and Beeswax always wanted. Special price list on bees and queens, also Poultry Feeds, mailed with Catalogs.

S. J. GRIGGS & CO.
Dept. 25 Toledo, Ohio
"Griggs Saves You Freight"

Eastern Beekeepers

This is the time you will need hives, sections, and foundation. Let us mail you our catalog giving prices on everything a beekeeper needs. We furnish full and nucleus colonies, bees by the pound, and queens.

A 3-fr. nucleus colony and Italian queen in a shipping-box, $5.10; tested Italian queens, $1.50; untested, $1.10.

Our location enables us to get goods to you promptly.

I. J. Stringham, 105 Park Pl., N. Y.
Home Apiary: Glen Cove, L. I.

Queens of Quality

Select, three-banded, leather-color Italians—bred for honey production. . . Untested queens, 75c each; 6, $4.25; 12, $8.00. . . Descriptive circular free.

J. I. Banks, Dowelltown, Tennessee

When Ordering Supplies

remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk.
Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager.

PENNSYLVANIA BEEKEEPERS

Our catalogs now out. Postal will bring you one. Root's goods at Root's prices. Prompt shipment.

E. M. Dunkel, Osceola Mills, Pa.

Full Values in

"Falcon" Beekeepers' Supplies

For the last forty odd years during our manufacture of "**FALCON**" supplies it has been our endeavor to place upon the market the very best possible line of supplies, and we pride ourselves in having accomplished this. "**FALCON**" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "**FALCON**" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "**FALCON**" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid Dealers Everywhere "Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK
where the good beehives come from.

QUEENS OF QUALITY

Capacity of Yard over 1000 Queens a Month

After 20 years of careful selecting and breeding I now have a strain of bees that cannot be excelled by any. . . . My queens are all bred from IMPORTED STOCK, the very best in the world for honey-gathering and gentleness. They are not given to swarming. What more do you want in bees than the three above qualities?

	1	6	12		1	6	12
Untested	$.50			Tested	$1.25	$7.00	$13.00
Select untested..	.75	4.25	8.00	Select tested ...	2.00	11.00	20.00

GUARANTEE.—You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition, to be purely mated, and to give perfect satisfaction. All queens that do not give satisfaction I will replace or return your money. Send for circular.

L. L. Forehand, Ft. Deposit, Alabama

Queens See our May Ad. Queens

THREE-BANDED ITALIANS THE BEST. They are hustlers, gentle to handle, cap their honey white, are very resistant to European foul brood. Some call them Long-tongue Red-clover Queens. Satisfaction and safe arrival guaranteed.

	1	6	12	50	100
Untested queens, June to November................	$ .80	$4.40	$ 8.00	$30.40	$ 60.00
Tested queens, June to November.................	1.00	5.20	9.60	36.00	70.00
Select tested queens, June and November..........	1.60	8.00	14.00	52.00	100.00

Let us know your wants. Circular free.

Nueces Valley Apiaries . . . . . Calallen, Nueces Co., Texas

3-banded Italians...

From May 1 until June 1

Untested, . . .	$1.00;	six, $4.50;	twelve, $8.00
Tested, ...	1.25;	" 5.50;	" 10.50

From June 1 until November 1

Untested, ...	$ .75;	six, $4.00;	twelve, $7.50
Tested, ...	1.00;	" 5.00;	" 9.00

Select tested, $2.00 each. See ad. in April 1 "Gleanings."
Circular free.

John G. Miller, 723 C St., Corpus Christi, Tex.

The "BEST" LIGHT

Positively the cheapest and strongest light on earth Used in every country on the globe Makes and burns its own gas. Casts no shadows Clean and odorless. Absolutely safe Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog AGENTS WANTED EVERYWHERE

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

SWARMING CONTROLLED . . . . .

If interested, address Charles Thompson, Marion, Iowa, for information.

Beginner's Book of 28 Pages, Free

Also our 44-page Bee-supply Catalog for 1917 is ready for mailing. Ask for your copy now.

OUR PRICES ON BEES AND QUEENS: 1 lb. of bees with queen, $2.25; 10 lbs., $20.50; 100 lbs., $190.00; 1 frame with queen, $2.00; full colonies, one-story hive included, $8.75; untested queens, 75c each. Our complete price list free, and safe delivery guaranteed.

The Deroy Taylor Company, Newark, N. Y.

PATENTS Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.

Chas. J. Williamson, McLachlan Building
WASHINGTON, D. C.

BEE SUPPLIES Send your name for new catalog.

Dept. T, CLEMONS BEE SUPPLY CO.,
128 Grand Avenue, Kansas City, Mo.

LE PAGE'S
CHINA
CEMENT
STANDS HOT AND COLD WATER 10¢

QUALITY BLANKE MARK

Blanke's BEE BOOK

This book describes our line of bee supplies. It contains much information valuable to the beekeeper.

We are centrally located. Shipments out of St. Louis will reach you promptly, and our long experience in this line enables us to fill your orders accurately. . . . Write for Blanke's Bee Book—it's FREE.

BLANKE MFG. & SUPPLY CO.
214-216-218 Washington Avenue, St. Louis, Missouri

PORTER BEE-ESCAPE

Saves Honey, Time, Money

PORTER
BEE ESCAPE
PATENTED

For Sale by All Dealers

THE A. I. ROOT CO., Medina, Ohio
General Agents for the United States

R. & E. C. PORTER, Manufacturers
Lewistown, Ills., U. S. A.

ALWAYS ON TOP

Established 1885

It will pay you to get our 50-page catalog and order early.

Beekeepers' Supplies

The Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

AT BOSTON

New England beekeepers will find everything in the way of supplies they will need the coming season. Place your orders early and avoid the rush. Send for catalog.

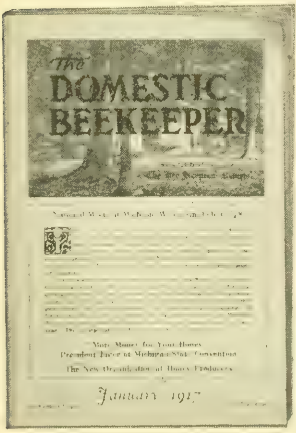
H. H. JEPSON, 182 Friend St.

New England Beekeepers

Every Thing in Supplies

New Goods Factory Prices Save Freight

Cull & Williams Co., Providence, R. I.



A SPECIAL INTRODUCTIONAL OFFER.

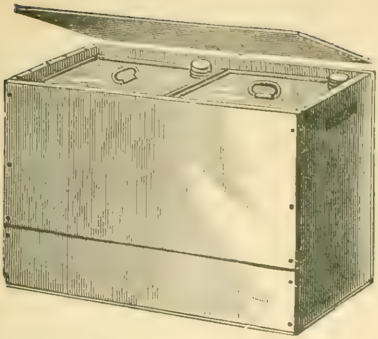
THE DOMESTIC BEEKEEPER

For Six Months for Only 25 Cents

The Domestic Beekeeper (successor to the Beekeepers' Review) is now a 48-page magazine with cover, much larger and better every way than the old Review. . . .

We want you to see for yourself what a large and interesting journal the **Domestic Beekeeper** is and are offering you this special price for a trial subscription for six months. Just wrap 25c in one or two cent stamps in a paper and mail it to

The Domestic Beekeeper . Northstar, Mich.



Get Cans

While You Can

We have in stock today five carloads of 60-pound tin cans and two carloads of friction-top pails, chiefly five and ten pound. We can ship these at once as ordered.

We Don't Know---

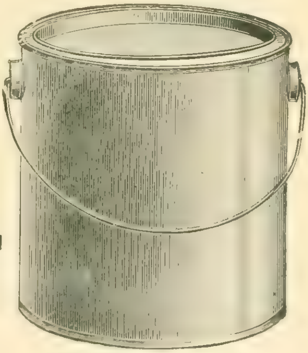
that we can secure any more cans and pails of the manufacturers. We may be able to and we may not. So we advise our patrons to cover their wants now.

Until further notice we offer the 60-lb. cans at the following prices: Cans only, without boxes, tied nine in a bundle, at $3.60 (weight, 24 lbs.); 50 in a crate, $20.00 (weight, 190 lbs.); two in a box at $1.25, or 10 boxes, $12.00; 50 boxes or more, at $1.10.

We offer five-pound pails, per box of 12, $1.30 per box; $17.00 per crate of 200; per case of 50, $4.50. Ten-pound pails, per box of 6, $1.10 per box; $13.00 per crate of 100; per case of 50, $6.75.

The A. I. Root Co.

Medina, Ohio



LEWIS BEEWARE

is at your very door

Send to Your Nearest Lewis Distributor for

Lewis Hives and Lewis Sections...

Hold to the "Beeware" trademark

BEWARE
WHERE YOU BUY YOUR
BEEWARE
WATERTOWN WIS. U.S.A.
MAKES THE FINEST.

It is your safest guidepost

Lewis Distributers:

California	Bishop, W. A. Trickey.
Colorado	Denver, Colo. Honey Producers' Ass'n.
Colorado	Delta, Delta Co. Fruit Growers' Ass'n.
Colorado	Grand Jct., Grand Jct. Fruit Growers' Ass'n.
Colorado	Rifle, C. B. Coffin.
Idaho	Caldwell, Idaho-Oregon Honey Prod. Ass'n.
Illinois	Hamilton, Dadant & Sons.
Iowa	Davenport, Louis Hanssen's Sons.
Iowa	Sioux City, Western Honey Producers' Ass'n.
Iowa	Emmetsburg, H. J. Pfiffner.
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New York	Newark, Deroy Taylor Co.
Ohio	Cincinnati, Fred W. Muth Co.
Oregon	Portland, Chas. H. Lilly Co.
Porto Rico	Ponce, Prats & Vicens.
Tennessee	Memphis, Otto Schwill & Co.
Texas	San Antonio, Texas Honey Producers.
Washington	Seattle, Chas. H. Lilly Co.
Wyoming	Wheatland, Fred M. Harter.

G. B. Lewis Company, Watertown, Wis.

Manufacturers

Gleanings in Bee Culture

Handsome Does
—So Handsome Is

Vol. XLV August, 1917 No. 8

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you SPOT CASH for any thing you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.
633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

Immediate Shipments: Telegraph Us.

Superior Foundation

(Weed Process). Special prices on quantity lots.

Honey-cans

We are fortunate in securing several carloads. Try us for prompt service.

Old Combs

We render on shares. Our steam process removes every ounce of beeswax.

Honey Sections, Extractors

Etc. Every thing in bee supplies.

Superior Honey Company, Ogden, Utah

Southern Headquarters for Three-banded Italian Queens

To supply the increasing demand for our queens we are new running nearly twice as many mating-boxes as last year, and six times as many as six years ago. We spare neither labor nor money to produce the very best that can be had. We are careful about our breeders for producing our queens and drones. We use the best methods to produce the best queens.

Untested queens	August and later,	$ .55;	12, $ 6.00;	100, $ 48.00
Tested queens	August and later,	1.00;	12, 10.75	
Select tested queens............	August and later,	1.65;	12, 18.00;	100, 180.00

Very best queens for breeders, $3.00 each.

If any of our untested queens prove to be mismated we are willing to replace them free of charge. No foul brood has ever been in our vicinity. Safe arrival and satisfaction I guarantee.

W. D. Achord, Fitzpatrick, Alabama

CONTENTS

AUGUST 1917

Editorial 589-592
Selling Honey—Symposium 593-597
Extracting on a Trailer .... H. H. Root 598
Quality vs. Quantity .... Arthur C. Miller 600
Conversations with Doolittle .... G. M. Doolittle 603
Letters from a Beekeeper's Wife .... "Mary" 604
My Last Year's Experience in Beekeeping .... Geo. W. Adams 605
Sunday Selling .... Susan R. Newcomb 605
Swarming (Article No. 3) .... P. C. Chadwick 606
Queen-Breeder Who Made Good .... Frank Fooshe 607
Beekeepers' Section at Mass. Ag. College .... Josephine Morse 608
Breed from the Best of the Best Strain .... C. E. Fowler 609
What Shall We Do With Them? .... O. J. Jones 610
Impossible to Keep to the Old Price .... Earl Seamans 610
Some of Our Short Cuts .... G. J. Yoder 610
Stray Straws .... Dr. C. C. Miller 612
Siftings .... J. E. Crane 614
Our Food Page .... Stancy Puerden 615
Beekeeping as a Side Line .... Grace Allen 617
Beginners' Lessons .... H. H. Root 619
Gleanings from the North, South, East and West.... Dept. Editors 621-627
Mother Bee Nursery Rhymes .... M. G. P. 628
Gleaned by Asking .... E. R. Root 629
Heads of Grain 632
Just News .... The Editors 635
Our Homes, Gardening, Health Notes, Temperance...... A. I. Root 638-644
Man Around the Office .... M. A. O. adv. pages

SUBSCRIPTION RATES.—One year, $1.00; two years, $1.50; three years, $2.00; five years, $3.00. Canadian subscription, 30 cents additional per year, and foreign subscription, 60 cents additional. **DISCONTINUANCES.**—On and after March 1, 1917, all subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name that appears on the paper. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order or check. **CONTRIBUTIONS** to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

(Entered as second class mail matter at the Postoffice at Medina, Ohio.)

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

Editorial Staff

E. R. ROOT	A. I. ROOT	H. H. ROOT	J. T. CALVERT
Editor	Editor Home Dept.	Managing Editor	Business Manager

"When we receive your Honey
Return mail brings your Money."

The Fred W. Muth Co.

Get Service Like this Man

Lake City, Mich., May 5, 1917.

Friend Muth:—Your letter with check for $146.20 for wax has been received. Thanks. I do believe you beat them all when it comes to quick returns for goods shipped you. I may have some more wax to sell after we get our cappings melted.

Yours truly,
(Signed) Elmer Hutchinson.

We Want Immediately

Extracted Honey

We buy all grades of Extracted Honey. Large or small lots. Send sample and price. If price is right we will buy. Parties who have Fancy and No. 1 Comb Honey, write us at once. We will buy from 40 to 50 carloads this season.

Beeswax

Send us your beeswax. We pay highest market prices, and send you our check the same day shipment is received.

Old Comb

Make some spare money from the wax rendered from your old comb. We will render it, charging only 5 cents per pound for rendering, and pay you best market prices for the wax rendered.

Shipping-cases for Comb Honey

We are prepared to ship you the same day order is received any number of shipping-cases. Several carloads are here now, ready for buyers. Send your order in now before our supply is exhausted. We sell Lewis Beeware.

Remember We remit the same day your shipment arrives. Read the letter above and be convinced that this is the house to send your shipments to. Try us.

The Fred W. Muth Co.

"The House the Bees Built"

204 Walnut St., Cincinnati, Ohio

HONEY MARKETS

The honey market remains a baffling proposition. The season is practically a month late the country over, and what the crop is to be in the white-clover sections may not be fully determined yet for a month. Several weeks of good weather after this date, July 20, thruout the clover country may yet result in a normal crop being harvested. Reports of the early crop in the far West and South are not generally good. There is one decided peculiarity of honey-crop reports received this season—they are ''spotted.'' That is to say, localities very near to each other will report almost exactly different conditions—one good, one bad.

That the price of honey is going to remain high, we cannot doubt. Sugar at this writing is higher, and honey prices are prone to move somewhat with sugar prices. A report comes from California that big bakers are refusing to pay more than 9 cents for the dark baking grades and are out of the market. But that there is a strong demand for all grades of honey the country over is certain.

We refer our readers to the prices quoted below and to special reports in our ''Just News'' department for the best information we can furnish on present prices and on probable future prices.

CHICAGO.—At this writing, none of the new crop of honey has appeared on the market with the exception of a few cases of extracted from Minnesota that is little better than sweet water. What it was gathered from, we do not know. At this writing it has not been sold, it having been rejected for the reason given. What little white extracted that has come on the market during the past month has sold at about 14 cts. per lb., without any ambers from which to quote. Advices now coming would indicate that, before the month closes, there will be honey from nearby sections, and the same should meet with a ready sale, for the market is entirely free from offerings of the preceding crops, or that gathered in 1915 and 1916. Beeswax is ranging from 35 to 40 cts., according to color and cleanliness. R. A. Burnett & Co.

Chicago, July 15.

NEW YORK.—Comb-honey stocks well exhausted, and the little left on the market dragging; prices range from 10 to 14 cts. according to quality. The market on extracted honey is very much unsettled, and prices fluctuating. California new crop is quoted at from 9¾ to 11 for light amber; 12 to 14 for white, and we are informed that sales of fancy white have been made at as high as 15 cts. per pound f. o. b. Coast. Receipts of West Indian honey are normal, and uncertain at this time of the year, but find ready sale at from $1.10 to $1.20 per gallon, and exceptionally fine lots at even higher figures. Southern honey is in good demand, and sells at from $1.10 to $1.30 per gallon as to quality. It is too early to say, at this date, what the crop in the East and Middle West will be.

New York, July 18. Hildreth & Segelken.

SAN FRANCISCO.—Small lots of both extracted and comb honey, new crop, are now appearing on this market, but the supply is irregular and the demand generally exceeds the supply. We quote fancy comb honey, per case, $3.25; No. 1, $2.75 to $3.00. White extracted honey, per lb., 12½; light amber, in cans, 10 to 11½; amber, in cans, 7½ to 10. Clean average yellow beeswax brings 40 cts.

Leutzinger & Lane.

San Francisco, July 12.

LOS ANGELES.—Extracted, demand active, supply limited. White, per lb., brings 15; light amber, in cans, 13; amber, in cans, 11½. The hot winds reached nearly all sections of southern California. Thousands upon thousands of colonies destroyed and many car loads of honey went to waste from combs melting. Flora dried up. Comb: no new crop yet and little being produced. No reliable quotations available. Geo. L. Emerson.

Los Angeles, July 12.

PORTLAND.—No new comb or extracted in market as yet. Season about three or four weeks late on account of wet spring. Old stocks are nearly depleted. Prospects fair to good according to locality. Old comb honey is selling at $3.50 to $4.00 per case of 24 sections. Have no quotations on new comb or extracted. Containers for extracted are hard to get at any price. No beeswax offered.

Portland, Ore., July 9. Pacific Honey Co.

TEXAS.—The honey crop is 85 per cent below an average at this time of year. A large per cent of the orders will have to be returned. As only a small portion of the honey-producing area of the state has had rain, prospects for improvement do not seem probable. We have had only one grade of honey this season, that being a very light amber. Bulk comb honey, No. 1, brings 13 cts. in two 60-lb. cans; half-cent rise for each of the smaller sizes. Light-amber extracted honey in cans brings 12 cts.; in barrels, 11 cts. Clean average yellow beeswax brings 40 cts. per lb.

Sabinal, Tex., July 12. J. A. Simmons.

ST. LOUIS.—Our honey market is in a very unsettled condition. No new comb honey is being offered here, as it is too early for the new crop now. New extracted honey is just arriving, but none offered. We are quoting our market nominally as follows: Extracted honey: light amber, in cans, 11c; in barrels, 10c; amber, dark, in cans, 10c; in barrels, 9c. Clean average yellow beeswax, per lb., 36½c. H. Hartman Produce Co.

St. Louis, July 19.

HAMILTON.—This market is about clear of all extracted honey. Some comb honey is left. No new honey has been offered to us yet. Fresh fruit is occcupying the consumer's attention at this season. Fancy comb honey brings $2.25 per doz. White extracted honey, per lb., in 60-lb. tins, 13½ cts.

Hamilton, Ont., July 16. F. W. Fearman Co.

KANSAS CITY.—We have received no new honey this season; very little on market; only comb honey; trade selling from $3.75 to $4.00. Crop of honey around Kansas City very poor. Extracted will sell from 10 to 14c, according to quality. Clean average yellow beeswax, per lb., 38c.

C. C. Clemons Produce Co.

Kansas City, Mo., July 18.

BUFFALO.—No new honey on this market at all. There is no extracted honey offering, nor is it possible at the present time to buy any white honey. There is a little buckwheat and No. 2 honey still left of last season which is being sold on this market at from 12 to 13 cts.

Buffalo, July 17. Gleason & Lansing.

PHILADELPHIA.—We are unable at this time to quote satisfactorily on the honey market. No demand whatever at this season, and no offerings as yet to speak of. Chas. Munder.

Philadelphia, July 18.

PITTSBURG.—Demand extremely light. Prices remain practically the same. We hear of no new honey being placed on the market here as yet.

Pittsburg, July 19. W. E. Osborn Co.

TORONTO.—New honey is not yet available on this market. No prices have been fixed, awaiting the meeting of the beekeepers' association. Last season's crop is practically exhausted.

Toronto, July 19. Eby-Blain, Ltd.

MONTREAL.—No new clover honey being offered. Stocks pretty well reduced. Buckwheat honey almost all gone. Comb honey, extra fancy, 17c; fancy, 16c; No. 1, 15c; No. 2, 13c; Extracted

honey, white, per lb., 14c; light amber, in cans, 13c; in barrels, 12½c; amber, in cans, 12c; in barrels, 11½c. Gunn, Langlois & Co., Ltd.
Montreal, Can., July 16.

SYRACUSE.—Nothing to quote on. Old honey all cleaned up and no new honey offered.
Syracuse, N. Y. E. B. Ross.

CLEVELAND.—Do not know of any honey in our market, either comb or extracted, except small lots in the hands of retailers. There is scarcely any demand and there will be practically nothing doing in honey until the new crop commences to arrive. C. Chandler's Sons.
Cleveland, July 21.

DENVER.—A few cases of new-crop comb honey are coming in now, which sell in a local way at $4.50 for No. 1 white, and $4.00 for No. 2 white. Crop promises to be light. White extracted sells wholesale 16 cts.; no light amber or amber available yet. We pay 36 cts. in cash and 38 cts. in trade for clean yellow beeswax delivered here.
The Colorado Honey Producers' Ass'n,
Denver, Col., July 21. F. Rauchfuss, Mgr.

MATANZAS.—Light-amber extracted honey, in barrels, $1.00 a gallon; amber, in barrels, $1.00 a gallon; clean average yellow beeswax, per lb., 38 cts.
Matanzas, Cuba, July 7. A. Marzol.

LIVERPOOL.—Since our last report the market has declined in consequence of the slow demand, free arrivals from Chili, and the restrictions imposed by the Food Controller on the percentage of sweetness allowable in confectionery. Up to date 1300 packages have been sold in Liverpool at the following rates, the quotations here being on hundredweights: Extra superior, $22.08 to $22.80; pile 1, $21.12 to $21.60; pile 2, $19.68 to $19.92; pile 3, $19.20. 1558 packages were offered at auction in London, but only 200 sold. Jamaica, set dull, $21.60; liquid amber, $18.60 to $19.20. Haytian, set palish, $21.00. Cuban, palish, $21.40; setting dull, $19.20; fermented, $16.80 to $17.52. Californian, dark to amber, $20.16. Contrary to honey, beeswax is firm. Up to $55.75 per cwt. has been paid privately for good Jamaican, while for West African from Gambia the same price is quoted.
Liverpool, Eng., July 12. Taylor & Co.

MEDINA.—We have no reason to change our opinion on the market since we reported it for July GLEANINGS, page 504. Since that date, weather in the white-clover belt has been erratic. The basswood district reports an excellent flow, starting with good prospects for a crop. A considerable volume of extracted has been received in the past 30 days from the tupelo, orange, sage, and mesquite districts. Offerings from the Pacific Coast indicate a somewhat easier market there. As previously stated we think white extracted honey should net producers 10 to 12 cts., and white comb from 14 to 16 cts. per pound. A. I. Root Co.
Medina, July 24.

U. S. Government Market Report.

Below is printed the third semi-monthly honey-market news report issued by the Bureau of Markets, U. S. Department of Agriculture, date of July 13:

New York.—Six barrels Florida, 38 barrels and 17 cases West Indian, arrived; no comb-honey arrivals. Extracted stock: market active, demand good, stronger; active buying for Italian export, resulting in wide range in prices; Southern, 12 to 13c; some sales reported 15c. West Indian: 12 to 14c; some 15c per pound. Beeswax, arrivals unreported; supplies adequate; demand light; yellow, mostly 45c; dark, mostly 43c per pound.

Kansas City.—Local receipts about 25 cases new honey; old crop, supplies practically exhausted. Demand good, movement moderate, market firm, all sales in small lots. Native Missouri old stock, firsts, 24-section cases, mostly $4.00 to $4.25; seconds, supplies exhausted. New stock, first, mostly $4.25. Supplies extracted stock exhausted. New crop late this year, and will be very light.

Chicago.—No carlot arrivals. Supplies practically exhausted, not enough to make a market. First shipment new, few cans Minnesota; rather light color, 12c. Old extracted, few sales, 12 to 13c per pound.

Cincinnati.—One car California; 32 crates Georgia, 75 lbs. each, arrived. Light local receipts. Market very unsettled, few sales. Comb honey, old light amber, $3.60 per case; no new stock on market. Extracted, old stock; dark amber, 13c; light amber, 15c. Nearby, new honey, few sales; small lots; cash paid to beekeepers, extracted dark honey, amber, 8½c per pound. Nearby honey expected to move heavily in two weeks.

Philadelphia.—Thirty-three barrels Southern, extracted, no imports; no comb honey arrived. No demand, no sales. Quotations reported are merely asking prices. Extracted, jobbing in barrels, Southern, 10 to 12c; California, light orange, 60-lb. tins, 13c per pound. Comb honey, no quotations.

St. Louis.—No fresh arrivals. Bright amber in barrels, 8½c; in cans, 9 to 9½c; dark amber, ½ to 1c less per pound. Comb in case, amber, 10 to 12c per section; dark and inferior, 9 to 10c. Fancy clover, 14 to 17c per section.

Minneapolis.—No new stock arrived. Supplies old stock practically cleaned up. Few sales.

St. Paul.—No new stock arrived. Supplies old stock practically cleaned up. Few sales.

Government Honey-Yield Estimate.

The monthly crop report, published by authority of the Secretary of Agriculture, for July, estimates the yield of surplus honey per colony to July 1, in the various States, as follows: Maine 3 lbs., New Hampshire 5, Vermont 3, Massachusetts 10, Rhode Island 18, Connecticut 9, New York 3, New Jersey 15, Pennsylvania 6, Delaware 18, Maryland 29, Virginia 20, West Virginia 12, North Carolina 15, South Carolina 25, Georgia 29, Florida 33, Ohio 13, Indiana 9, Illinois 7, Michigan 1, Wisconsin 6, Minnesota 5, Iowa 5, Missouri 9, South Dakota 5, Nebraska 5, Kansas 13, Kentucky 13, Tennessee 16, Alabama 9, Mississippi 22, Louisiana 30, Texas 20, Oklahoma 9, Arkansas 35, Montana 10, Colorado 4, New Mexico 10, Arizona 41, Idaho 5, Washington 12, Oregon 2, California 33. The proportion of the full crop usually produced up to July 1 is from 65 to 80 per cent of the total crop in the Southern States, and from 7 to 50 per cent of the total crop in the Northern States. The average proportion of the total crop in all the States produced up to July 1 is estimated by the Government to be 50.8 per cent of the total production of the year; but this proportion varies from 7 per cent in Colorado to 80 per cent in Louisiana.

WANT HELP?
WANT A POSITION?

Almost daily GLEANINGS receives from one to a half dozen inquiries from beekeepers who want help in their apiaries, or from men who want employment in apiaries.

The job and the man ought to be able to get together—and they can.

This is the best way we know of doing it: Put an advertisement in either the "Help Wanted" or "Position Wanted" department of GLEANINGS. It will cost you 25 cents a line (9 average-length words to the line) for one insertion of such ad.

Try it—for the job and the man ought to get together.

Address Advertising Department, GLEANINGS IN BEE CULTURE, Medina, O.

Seasonable Supplies

Fine Italian queens for August requeening
Five and ten pound friction top pails
Cases of two five-gallon cans
Shipping-cases
Cartons, Honey-labels
Beeswax wanted
Extracted honey wanted
Let us quote you our prices

M. H. Hunt & Son, Lansing, Michigan
General Agents in Michigan for Root's Bee Supplies

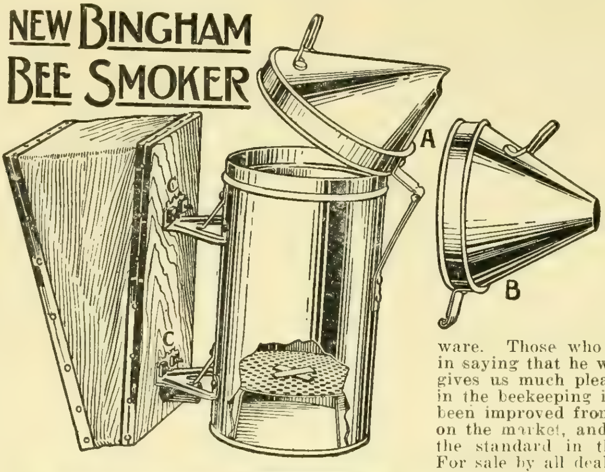
NOTICE!

Honey . Wanted . Honey

Do not forget, when your crop of honey is ready for sale, to send us a sample. State your price, also how it is put up. We are in the market for unlimited quantities, and will pay cash on arrival. Let us hear from you before selling your crop.

C. H. W. Weber & Co., Cincinnati, O.
2146 Central Avenue

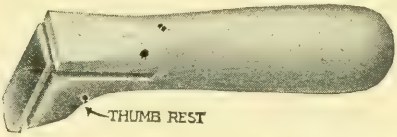
NEW BINGHAM BEE SMOKER

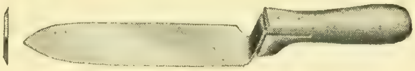


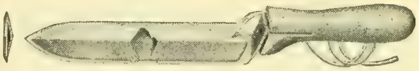
In 1878 the original direct draft bee smoker was invented and patented by Mr. T. F. Bingham of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey-knife for nearly thirty-five years; and in 1912, becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general beeware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men and it gives us much pleasure to help perpetuate his name in the beekeeping industry. Bingham smokers have been improved from time to time, are now the finest on the market, and for nearly forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.

Smoke Engine, 4-inch stove	$1.25
Doctor, 3½-inch stove	.85
Two above sizes in copper, 50 cts. extra	
Conqueror, 3-inch stove	.75
Little Wonder, 2½-inch stove	.50

Hinged cover on two larger sizes.
Postage extra.







Bingham Honey Uncapping Knives

with New Cold Handles

We are furnishing the same quality steel, best money can buy, thin-bladed knives that Mr. Bingham manufactured years ago. The old timers all remember these knives and many are writing in as Mr. Volstad in the following letters. The substitutes offered by others have not given the satisfaction desired.

A. G. Woodman Co. Lyle, Minn., June 21, 1917.
Gentlemen:—Have you the thin good-working uncapping-nives we used to get about 20 years ago, and that worked to perfection? K. H. Volstad.

We sent an 8½ and 10 inch knife and received the following letter.

A. G. Woodman Co. Lyle, Minn., July 5, 1917.
Gentlemen:—Knives received, glad you sent them at once. They are just what I want and have been looking for but did not know where to get them. K. H. Volstad.

Many of the most extensive honey producers insist on the Genuine Bingham knives. Mr. N. E. France of Plattsville, Wis., gave us a fine unsolicited testimonial on the steam-heated Bingham knife, too long for this space. Present prices are: 10-inch knifes, 85 cents each; 8½-inch knives, 75 cents each; steam-heated knives with tubing, $2.50 each. Postage extra.

TIN HONEY-PACKAGES

The tin-plate situation is becoming more serious from day to day and prices have taken a steady advance for the last year and a half. Prices still continue to advance slowly and at the present time it is almost unobtainable. We purchased enough tin plate for our bee-smoker trade to last us a year or more, before the war was declared. It would be a hard matter for us to get it at any price now. Our three-year contract on tin honey-packages is still being honored and runs to Jan. 1, 1919. Prices are adjusted every three months, but we are considerably under present market prices and we are saving money for carload buyers and others of smaller lots. Send us a list of your requirements and let us figure with you.

FRICTION-TOP TINS

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	...	12	6
Crates holding	...	...	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

A. G. Woodman Co., Grand Rapids, Michigan

SEASON OF 1917

What is Your Report?

The white-honey crop is two weeks late in New York state on account of the cold backward spring and so much rain. If you secured a crop you will need shipping-cans. . .

We have quite a supply of these for immediate shipment. . Later there may be trouble in securing them. Better estimate how many you will need and send in your order. Remember, the cases are already packed up in lots of 10 and 50. Any other number will cause some delay in shipping.

F. A. Salisbury, Syracuse, New York
1631 West Genesee St.

LEWIS BEEWARE

is at your very door

Send to Your Nearest Lewis Distributor for

Lewis Hives and Lewis Sections...

Hold to
the "Beeware"
trademark

BEWARE
WHERE YOU BUY YOUR
BEEWARE
WATERTOWN WIS. U S A
MAKES THE FINEST.

It is
your safest
guidepost

Lewis Distributers:

California	Bishop, W. A. Trickey.
Colorado	Denver, Colo. Honey Producers' Ass'n.
Colorado	Delta, Delta Co. Fruit Growers' Ass'n.
Colorado	Grand Jct., Grand Jct. Fruit Growers' Ass'n.
Colorado	Rifle, C. B. Coffin.
Idaho	Caldwell, Idaho-Oregon Honey Prod. Ass'n.
Illinois	Hamilton, Dadant & Sons.
Iowa	Davenport, Louis Hanssen's Sons.
Iowa	Sioux City, Western Honey Producers' Ass'n.
Iowa	Emmetsburg, H. J. Pfiffner.
Michigan	Grand Rapids, A. G. Woodman Co.
Montana	Fromberg, B. F. Smith, Jr.
New York	Newark, Deroy Taylor Co.
Ohio	Cincinnati, Fred W. Muth Co.
Oregon	Portland, Chas. H. Lilly Co.
Porto Rico	Ponce, Prats & Vicens.
Tennessee	Memphis, Otto Schwill & Co.
Texas	San Antonio, Texas Honey Producers.
Washington	Seattle, Chas. H. Lilly Co.
Wyoming	Wheatland, Fred M. Harter.

G. B. Lewis Company, Watertown, Wis.

Manufacturers

GLEANINGS IN BEE CULTURE
AUGUST, 1917

EDITORIAL

IT'S UP TO THE HONEY-PRODUCER.

EVERY HONEY-PRODUCER, in any discussion of honey markets and prices today, should keep clearly in mind one central fact, and that is this: Honey prices and markets may be made very largely by the producer, and he can and should determine them.

Low prices for honey in the past have been the result of the producer's own part played in the market. He has sold at a low and unprofitable price when he could have got more by fixing his price right. Especially is the beekeeper who sells direct to the consumer or the local grocer the sole maker of the price, and all too often he has made that price far below the worth of his product.

As illustrating what we have in mind, we recall an incident in the Wisconsin field. Carload buyers made a price in a certain locality there that was accepted by some honey-producers and rejected by others. After the big buyers had quit the field, a large number of the producers that had rejected the carload offers laboriously peddled out their crop as they could, at a figure actually lower than the big buyers had offered to take it at their doors. These beekeepers not only knocked down the price of their own honey and established a low local figure to be used against them in future years, but they made the legitimate figure for the honey as finally bottled, labeled, and got on the market by the wholesalers look like robbery. They bludgeoned their own business all along the line.

It is the lack of business foresight and haphazard selling on the part of honey-producers themselves that have in the past made a low-price honey market and an uncertain and unstable market. Ignorance of the honey market—knowing nothing of price quotations—has been another contributing factor to a low and undeterminable market. The producer cannot expect the big buyers to offer him right prices when he is ignorant of the market and often sells his product far below its real value. In sheer self-defense against the competition of other big buyers, every one of these big purchasers is going to get his honey at as low a price as the producer will sell it. He sets his price (his first offer, anyway) at the possible figure of the honey-producer who doesn't know the market, and who in the past has sold his honey at any and every price.

The seller in his local market is especially to be warned against selling at too low a price. He is often tempted by any price above that offered him by the big buyers. But what he should consider is the fact that before that big buyer has got his honey bottled, labeled, packed, freight paid, etc., and on the market, a minimum cost of 5 cts. a pound has been added. A bottler who buys at 10 cents today must sell wholesale at more than 15 cents; and before the consumer gets the honey the retail merchant must have his cost of doing business out of it and a small profit. Now, then, the beekeeper who sells his honey locally should not set his price by what the big buyer offered him at his door, but by the price that the local grocer has to get after the honey has gone thru the bottling process and the usual lanes of wholesale trade. If the local seller does not do this he neglects his own right, and he injures the honey market everywhere.

Honey cannot take its rightful place as a staple food product, with a stable, quotable market price and a right price, until the honey-producer himself selling in his local market (at cost of much labor and time), to either consumer or retail merchant, fixes his standard of price—not by wholesale buyer's price for the raw product at his door, but by the price of that product after it has gone thru the bottler's hands and returned thru wholesale channels to the retail merchant's store-shelf.

The beekeeper, selling locally, must sell at about the grocer's price, or he is doing himself an injustice and is helping to keep honey down and its market unsatisfactory and unstable. The greatest enemy to higher honey prices in the past (and today) is that beekeeper who doesn't know the market and sets his standard of price for local sales by the car-lot figure offered by the big buyer and bottler rather than by the price of the bottled and labeled product on the retail grocer's shelf.

Until the honey-producer clearly recognizes this truth and acts on it firmly, the price of honey is going to remain uncertain, unsatisfactory, and lower than it should be.

It's up to the honey-producer himself.

IS IT THE ISLE OF WIGHT DISEASE?

WE ARE AGAIN having reports of bees dying in large numbers in a few localities. The symptoms tally very closely with those reported for the Isle of Wight disease, of Great Britain, or the disappearing disease, as it has been called in this country. It affects only the adult bees; and whatever it is, it seems to attack old and young bees as well as drones alike. But it has no effect on the brood in any stage of growth. In yards where the disease appears, bees will be found out in front of the entrances, nervously running about, crawling up spears of grass and trying to fly. They seem to be in great distress, running around till exhausted. As the disease advances, the bees seem to be tugging away at their wings, and scratching their bodies with their legs as if itching or in pain. In the more advanced stages they will be found with wings out of joint crawling around the apiary, and even several rods away. Sometimes only one colony is affected, while the other colonies in the yard are in normal condition. In other instances there will be four or five colonies near together, and all afflicted with the same trouble.

So far as reported in this country, the disease comes and goes. Sometimes it cleans out the colony entirely, and sometimes only a small proportion of the bees die. In one instance where it was very bad last summer it disappeared, and did not occur again in that yard until this summer.

In one yard which we recently examined the disease was reported to be very bad about two weeks ago. At the time of our visit recently it had all but disappeared and a big crop was being harvested.

We have never seen it in our Medina yards, altho a few years ago we found a few bees crawling up some spears of grass. The number was very few.

We should be pleased to learn if others have seen any of the symptoms of the disappearing disease; and if so, have any of the symptoms of last summer reappeared?

It should be explained that this disease of which we speak is very much unlike bee paralysis. The bees are not black and shiny, nor are the abdomens distended. A paralytic bee is logy, while a bee affected with the other disease is as lively as a cricket until it exhausts itself by constant running and by its hurried rush thru the grass. Except for extended wings, constant running in the grass, and general uneasiness, and a tugging of the legs against the body as if itching or in pain, the bees appear to be perfectly normal. Externally there are no symptoms expect in the general behavior.

HATCHING BROOD OVER EXCLUDERS

SOME OF OUR apiaries in the early part of the season are used for supplying nuclei and pound packages and whole colonies of bees. Others are devoted exclusively to queen-rearing. When a colony loses three frames of brood and bees or a pound of bees in June, it is crippled for honey-production; but such colonies when weather conditions are favorable, followed up by the proper kind of manipulation, may often be in good condition for extracted honey, altho they will generally be too weak for the production of comb unless the season is late.

This year the dandelions helped out amazingly in brood-rearing, for our colonies were depleted by the sale of bees and queens. The result was, brood-rearing was kept up to a high pitch for nearly a month, because the dandelions kept in bloom owing to the backward rainy weather for a much longer period than usual. It was astonishing how some colonies built up from some four or five frames of brood and bees. Where queens were unusually prolific we drew from their colonies frames of hatching brood and gave to the weaker colonies. The result was that most of our colonies were of very nearly even strength about the first of July, but not up to good honey-gathering strength. As the colonies continued to build up we worked the hatching-brood principle still further. When any colony reached a point where it was boiling over with bees, and was likely to swarm, we put on an upper story with an excluder between. All sealed or hatching brood was placed above, and all unsealed brood with the queen was placed below. The object of this was to give more room for the queen; and as the hatching brood emerged this would provide additional room in the supers for some ten days or two weeks later. The plan has worked out well. By extracting time there will be little or no brood in the supers.

Not a few extracted-honey producers have been practicing this plan of putting all the sealed brood in the supers and the queen and unsealed brood below by means of an excluder. It keeps down the swarming tendency, automatically supplies room for the storage of honey as the brood hatches out and gives more room in the brood-nest.

This summer our Mr. Pritchard in one or two of his outyards has been practicing a different plan. When colonies were boiling over in strength so he had to put on upper stories, he caged his queens and kept them caged for a couple of weeks. In the mean time, honey came in with a rush, and the bees stored both hive-bodies full of honey. As they could not swarm out without the queen, they could do nothing but store honey. Of course he cut out the queen-cells.

The plan has worked out well, says Mr. Pritchard. It has the advantage that swarming is held absolutely under control.

There are some, however, who dislike the bother of cell-killing and who believe that a colony with a caged queen sulks or does not work with the same energy as where their queen has the range of the lower story. They therefore prefer to work with queen-excluders with hatching brood above. But cells must sometimes be killed in the upper story.

* * *

BUCKWHEAT A PROFITABLE CROP

DURING THIS YEAR, when the whole wide world is asking for a speeding-up in the food production of the United States, there is no one crop that can be put in to help out more than buckwheat. It is a quick grower, maturing in from 50 to 60 days, and can very often be put in between two other crops to good advantage, thus increasing the amount of food per acre. It is a wonderful exterminator of weeds; and when grown between other crops the land on which it is grown will often be mellow enough to put in either wheat or rye afterward, without the use of even a drag. The wheat or rye is simply drilled in on the buckwheat stubble. As to which should go in will depend on the time the crop is harvested. In case of a very late crop it may be advisable to put in rye in place of wheat.

Almost any soil will do providing it is well drained; but any soil is improved for the growing of buckwheat by the use of fertilizers. Enormous yields have been secured on clover plowed under—as high as 40 bushels per acre. Moreover, buckwheat itself can be plowed under just after the blooming period, to the great advantage of the land for a following crop. Plowing under is often practiced when there is danger of frost killing before the seed can mature.

While buckwheat can be grown in the spring, there is always danger of hot weather setting in later on, or an early frost killing it.

Buckwheat is put in from June 20 up to Aug. 20. Where there are many bees in the locality and honey is desired as well as grain it is advisable to put in one crop about June 20, another July 1, another July 15, Aug. 1, and Aug. 15. The crop put in in June is liable to be blighted by too much hot weather; but it is not usual to put in buckwheat much before July 1 nor later than Aug. 1. Buckwheat may mature in 50 days, but usually it takes from 65 to 70 days. One must, therefore, take into account his particular locality and the probabilities of frost in September.

Buckwheat honey sells readily in localities where the plant is grown extensively; particularly in Albany and New York City; but it is of rather slow sale in markets where it is unknown. It usually commands a good price—very close to clover.

In practically all localities buckwheat yields nectar a little while in the morning, say from eight to twelve o'clock, and then again toward evening. In the interim the bees are apt to be pretty cross, as they always are when there is a stoppage of the honey-flow, either on account of rain or of a sudden drop in temperature.

AMOUNT OF SEED PER ACRE.

This is a mooted question. Some say two pecks is enough; others say three pecks is about right. Others go so far as to urge a bushel per acre; and when the Japanese variety is used, 1½ bushels is advised. Usually three pecks is about right, especially if the silverhull or common black is used. Japanese requires more seed per acre. Experience seems to show that silverhull and the common black buckwheat yield more honey per acre than the Japanese. The older varieties branch out more and furnish more bloom; and, while the seed is smaller, there is more of it per acre.

There is a tendency just now to abandon the Japanese, both for flour and for honey. While the Japanese seed is larger than the seed of the common black, it has been claimed that it does not yield more flour.

There are some sections of the United States that are more favorable for the growing of buckwheat than others. Buckwheat is grown extensively in some of the central counties of New York, particularly Schoharie, Schenectady, and Montgomery. In these counties buckwheat is counted as one of the most prolific sources of honey; and following, as it does, immediately after clover and basswood, it increases immensely the earning power of a colony, because at the close of the white-honey harvest the bees are in splendid condition for gathering a crop of buckwheat and goldenrod, which often come in at the same time. Buckwheat is also grown to some extent in Ontario, and yields considerable honey. It may also be found in Michigan, Wisconsin, and Minnesota. It is not grown extensively in the South, nor west of the Mississippi River.

* * *

THE HONEY-CONTAINER SITUATION.

THE NATIONAL CANNERS' ASSOCIATION, whose members comprise the largest makers of tin plate and of tin cans in this country, has sent widecast a public letter which in part says: "The impending shortage in tin plate and tin cans has been averted. By careful economy in the use of tin cans the supply will be equal for all necessary demands."

We hope that this is true, or very soon will be true. But just at this time we know that tin-can manufacturers are filling orders very slowly and that they have very recently advanced prices to what seems an almost prohibitive figure. It occurs to us that the tin-can manufacturers may mean that they can supply their trade at the enormously increased prices asked by these manufacturers. It is undoubtedly true that manufacturers of almost any necessity can supply the demand that is willing to pay any price that the manufacturers will put on.

At present, dealers in cans are very likely to be short in some sizes, and they experience great delay in securing these exhausted sizes from the manufacturers, and where the price of tin cans will go to, judging from the increased quotations of the manufacturers, no one can predict.

What we have said about the tin-can supply, and what the manufacturers are doing in the way of supplying dealers for their trade, may also be said of the glass situation. Most dealers have a considerable stock of glass containers of various kinds, but these dealers are very likely to be out of certain lines of glass containers (and these likely to be the most called for), and they find it very hard to secure a new supply from the manufacturers, even at the greatly increased quotations. Every dealer in glass containers knows that there is no certainty when he can secure an order from the manufacturer, with the consequence that many of his customers must be disappointed and greatly inconvenienced.

If we were going to modify what we have said in previous numbers of Gleanings as to the container situation, it would be to say this: The honey-producer *may* be able to secure both tin and glass containers before the end of the honey season; but just when or at what price is altogether uncertain.

The honey-producer who has his containers in stock, or has the assurance of his dealer that he can supply him out of stock already in the hands of that dealer, is fortunate. The honey-producer who has to secure containers that his dealer has yet to procure from the manufacturer is likely to be greatly annoyed before he can secure his supply.

Whatever the manufacturers of tin cans and glass containers may say as to averting an impending shortage, it is certain that they are very slow in filling orders, but are not nearly so slow in advancing prices to a hitherto unheard-of level.

* * *

THEY HAVE HAD A HARD SEASON.

SOUTHERN QUEEN AND bee rearers should be charitably judged this year for making delayed deliveries. They have had almost every disadvantage to contend with. The late cold spring and continued bad weather made rearing late and delayed orders inevitably. Piled on top of this was the great increase of correspondence made necessary to explain delay of shipments or to answer complaints because of delayed shipments. It has been as one prominent Southern bee-breeder wrote us: "We have just simply had to do what we could (and that was a lot) and leave the rest undone." So, those ordering bees and queens from Southern breeders this year should not judge them too harshly even if orders have been greatly delayed.

MANY IDEAS ON SELLING HONEY AND HONEY PRICES

Plans and Ideas from the Producers—the Ones Most Vitally Interested in the Disposal of the Crop

Little Chance for Co-operative Selling

IT would seem an easy matter to get a beekeeper in successful touch with others whose crop has been a failure, or with those who by easy stages have built a trade far in excess of their production.

But after one season trying the game, I should like to tell a few of the reasons why I fail to see any bright outlook for co-operative selling. I began some seven years ago with one colony. Four years ago I found I had more comb honey than I could dispose of at home. Being on a good road for auto travel I made a canvas comb-honey sign which I swung across the road (GLEANINGS, 1916, p. 849). That season I had 40 sections left when the roads got bad. The next season, while I secured a larger crop, I did not have enough to supply my demand; for as I stamped my name on each section, I secured by mail many case orders for shipment. Seeing the handwriting on the wall I secured by purchase and increase still more bees and began to put out feelers to small producers for prices of comb and extracted honey in 500-pound lots.

Last year my troubles began in earnest. I had a very large crop for this location. It was mostly extracted, and so I began to look about for comb honey. For retailing I obtained from a producer a crop of No. 1 comb at 17 cts. This was all right; but I had been accepting orders from grocers who expected to make 20 per cent; and to sell at 25 cts. per section, and for this trade, I found my margin was too small. When the auto trade was over and my honey was about gone, my sales continued to increase daily and were nearly $150 per month (a little later they were about $200). I began corresponding with producers, and I found they all wanted from 17 to 19 cts. for No. 1 sections, and expected me to pay the freight. Now, at various times I had received orders from a wholesale house in New York, so I decided to try *buying* of them instead of *selling*. I found that I could secure No. 1 comb at 15 cts. and quite often at 14, and the fancy at $3.88 per case. The latter I sold to choice trade only. I bought 25 cases from New York at 14 cts., twelve of them being from a producer who had asked me 17. Now, why the difference? If that man had offered to sell at 15 cts. I would have purchased his entire stock. Would he not have been ahead? No wholesale house handles honey for its health, yet up to Dec. 1 I bought barrel after barrel of white clover from New York at 8 cts., and many producers asked 9 and even 10. Of course this season was an exception, and some of them, no doubt, secured their 10 cts. or more. I bought one barrel from New York at 7½ cts., and wrote immediately to the producer, but found he asked me 9 cts. in Florida.

An Ohio man quoted comb at fair price, and I ordered a carrier. The grading was poor, 29 sections being No. 2 instead of No. 1 as quoted. My New York shipments are only two or three days on the road; but this was 22 days in coming; and the freight, instead of being 18 cts. per hundred, was 65 cts. If this honey had been graded properly I should have made 2½ cts. per section. As it was, I lost money. Why can't one grade as well when selling to a co-operator as when selling to a wholesaler? One man kindly informed me that he could slip in a few No. 2 with No. 1; and as there was only 4 oz. difference between the grades, these few sections would escape notice; and if I could use the honey that way he could make me a price of 20 cts. flat! Even at that, the price would be above my selling price in lots of five cases or more.

Now, there may be other reasons for the failure of co-operation; but I am telling only what I know to be true in my case alone; and I say that, as long as the producer demands of the one who has gone beyond his home market as much as or more than he does of a near-by wholesaler, just so long will the co-operation seeds fall on barren ground.

Wading River, N. J. S. POWERS.

Careless Grading Never Pays

"Can I get by with it?" This question naturally arises in the minds of many people when they are about "to put one over on the other fellow." We answer, "Yes, you may; but you will pay in the end for your tricks. Do not think that you can fool all the people all the time, just because you have deceived some of the people part of the time. It does not pay to take a mean advantage of a man just because he is not standing over you with a shotgun."

In grading comb honey it is poor policy to think, "I will slip this one into the fancy grade. I will put that one over on the future buyer." As surely as one does this there will be a reaction. He will soon be sized up, his trade divided, and his reputation gone. Many farmers put the big potatoes on the top; but the buyer always gets to the bottom. Of course he should not cheat himself by putting all the poorest on top. But he should be on the square. The grocer does not expect fancy mixed with No. 2 when he buys for No. 2 price. The cut-rate grocer has a right to buy and sell cut-rate goods, the price being agreed upon and the quality and quantity considered; but the goods must be just as represented if he is to have repeated orders.

A REPUTATION.

A reputation for square dealing is worth a gold-mine. We have in mind some fruit-growers' associations with strict inspection rules. Their goods always bring a premium. We had two cars of comb honey from one shipper in which not a single case was "off." Don't you think such shippers are entitled to get better prices and prompter sales and returns? They create a demand for their goods.

For this year increased prices are assured, no matter how big a crop. To say comb honey may bring a dollar per case more than the 1916 crop is a conservative statement. Let us do all we can for a bumper crop, market our comb honey early, and get the best results. G. P. Stark.

Mgr. National Honey Producers' Ass'n.
Kansas City, Mo.

Eliminating the Middleman

The articles on selling honey have prompted me to give some of my experiences. Our grocers are poor individuals to depend upon for the disposal of our honey. I have had some of them expect 50 per cent in commission, and it is now worse than ever, since the war gives them an excuse to exact untold profit from the public. As an example, a neighbor had some choice surplus garden truck to dispose of, and received only ½ ct. a bunch for early beets, while her commission shark retailed them at 8 cts. per bunch or two bunches for 15 cts. Her other vegetables brought in quite as discouraging results. Since then she finds her own customers and receives much fairer returns for her toil.

Our experience in disposing of honey has been much the same, and we find it far from pleasant to sweat and toil thru the summer months and then have the grocers offer such low prices saying, "Why, I bought some honey from a man last week at $2.00 per crate." Perhaps they show you a sample—a dirty, propolized section weighing less than ten ounces. And even after they have seen your perfect sample, your price still seems to puzzle them, and they refuse to buy but continue to retail that same rusty stock at 25 cts. It is just such experiences as these that have caused us to solicit orders for retail sales and then make the deliveries.

In selling and creating a want for our product, we find it a good plan to attend large gatherings of people at picnics and fairs. Also repeated orders will follow as a result of a daily or weekly advertisement in the local papers, letting people know that you are doing the same old business at the same old stand, and that "Attractive goods and prompt delivery" is your slogan.

Mays Landing, N. J. C. L. Hill.

Everybody Busy Trying to Grab

Colonies are in fairly good shape. I think I am running more than any one else; and while there is a great deal less clover than last year, yet there is enough providing we get the right weather. We contracted to sell all our honey crop at an advance of a quarter of a cent per pound on last year's prices. This was done in the face of the talk of enormous increase in prices. I am utterly disgusted with the grab and greed of the present day. I have said time and again that, taking the human race as a whole, every one seems to be so busy trying to grab that he cannot devote any time to preventing the other fellow from grabbing from him. It has been amply proved that in many cases enormous sums have been made by speculators; and I, for one, should I be living that long, want to be able, when the crash comes, to be able to look every one in the face and say, "I had no part in it."

Looking at it from a selfish standpoint the price that honey has sold at has done much to bring it into use and popularize it. I quite concede the value of some having brought honey in advertising before the public; but the price also has popularized it.

We shall probably have a very large apple crop, none of which is likely to be exported, for not enough ships can be secured to transport what is considered much more necessary. Abundance of fruit always influences the demand for honey.

Prices in the United States have been about three cents a pound lower than in Canada, and the prices which prevailed last winter in the United states have only reached what our prices have been for some years.

Perhaps many will not like what I have said; but they are welcome to throw all the stones they please. But to prevent any one from attacking me on the ground that I am not interested, let me say that there is probably no one in Canada who has a better chance of securing a good honey crop than we have. R. F. Holtermann.

Brantford, Can.

Don't Ask the Consumer too High a Price

Last season I sold nearly 5000 lbs. of my own honey, and also some that I had purchased. I asked only one man (a merchant) to buy. I was sorry for having asked him, as I could have sold it all and realized more money.

I first study the market prices in the different centers, and then begin by putting my price a cent or two above the wholesale. I would discourage selling to middlemen, as I think the commission men want to extract too large a profit, and therefore the honey business is hurt. The syrup manufacturers get the consumer's trade. There is one syrup manufacturer in this country who prints the picture of a beehive on his syrup labels, which I contend is misleading, and tends to hurt honey sales. This should be stopped.

I would rather sell my honey to the consumer at a wholesale price than ship to a commission house, as the freight and tins are saved to me, and the public is thereby encouraged to use honey, which in the end gets me more for my honey than any other way.

Don't drive the consumer to invest in other lines by asking too high a price for your honey. Geo. W. Strangways.

Elora, Ont., July 11.

No Trouble to Sell Honey at a Country Fair

The illustration shows my honey display at our fair last fall. Fifteen years ago I started selling my honey this way, and now I cannot produce enough to go round, so I have to buy. It takes over a ton of honey to last the two days.

I have often wondered why more beekeepers do not sell their honey at fairs. There is no way that will sell the honey like having lots of bees and queens, and showing them. When the people see them they become interested and are sure to buy some honey before they go. My observatory hive is 4 ft. high and 5 ft. long, with a big glass front all filled with brood-frames, extracting-frames, and sections at top. I had a nucleus hive out in front so people could get right up close and see the queen lay eggs. My exhibit was 15 ft. long and does not show all on card. It is no trouble to sell honey at a country fair.

MILLER'S HONEY

E. C. Miller, East Claridon, Ohio, sells over a ton of honey every year at a country fair.

East Claridon, Ohio. E. C. Miller.

Swapping Honey for Grain

Many of the farming class give but little attention to the garden and fruit-growing, their time and attention being fully occupied with the farm and stock-raising. Years ago I found that many who would not purchase for cash would gladly exchange grain for honey. So just after thrashing-time I could start out with honey in 5 and 10 pound pails and return with a load of grain, as from 5 to 20 lbs. would be left at almost every house.

Then in January and February when preserves were largely used up and housewives in villages and country were hungry for something to "piece out" till maple syrup came in these pails of honey just *filled the bill.* In this way hundreds of pounds were worked off at good prices.

Season is late here, but prospects are good.

Toronto, Ont. F. P. Clare.

If You Expect a Good Price, Ask it

In response to your query, "How shall we get the most for our honey?" I will suggest that the answer may be found in two words, "Ask it." It is perfectly plain to me that if we don't ask enough we shall not get enough.

Many beekeepers have not sufficient confidence or vision to expect a good crop; and then if it comes to them unexpectedly

G. W. Nance, Anthon, Iowa; 10,000 pounds of honey direct to the consumers.

they are in a "blue funk" and cut the price for fear that they can not sell, which reminds me that "A fool and his honey are soon parted."

I have been raising and marketing honey for over thirty-five years, and will say that the price of this season's crop is about the last thing I should worry about. For the last four or five years we have been getting ten to fifteen cents per pound for our fine clover extracted, none less than ten cents in 5 to 25 case lots in bulk just as it came from the extractor. With the prices of all kinds of food products advanced fifty to one hundred per cent there is no likelihood that honey will go downward unless other things do.

For this season's entire crop, be it large or small, we have a standing offer of twelve cents at Oberlin; but as we are now getting fifteen at wholesale I see no reason why we should not get as much or more for the new crop.

Oberlin, Ohio. Chalon Fowls.

Fording Direct to the Consumers

My apiary of 125 colonies produced 10,000 pounds of honey last year. In the foreground of the illustration is my Ford honey-car by means of which I am able to dispose of about all my crop direct to the consumers. On making a trip I ship about 3000 pounds of honey ahead of me and then come along in my Ford and pick up whatever I may need up to 600 pounds. I sell about $50 worth per day, at the rate of five pounds for 75 cts. or a ten-pound pail at $1.50.

Anthon, Iowa. G. W. Nance.

And so Could He Really Blame the Other Fellow?

June Gleanings is full of interest as usual, and I take it for granted you won't expect even me to agree with everything. I likewise take it for granted you'll say "Flubdub!" likewise "Pish!" or even "Tut! tut!" at what follows:

One time a certain man sat him down and inveighed bitterly at the minus-patriotism of a certain rich man. "The country needs powder; 50 cts. would give him a good profit, and he insists on 75 cts. The Benedict Arnold!" And he wailed and wrung his hands at the hardhearted.

He also used strong words of wrath at certain other men who bought up all the grain of the land, even as did Pharaoh in the days of Joseph, and sold it at a price, whereat flour went skyward toward the $20 mark. "These men are the scum of the earth! They grind the face of the poor, and give them but dust to eat and the grass by the roadside. Could they corner the air we breathe they would do so and sell it at a great price. A lamppost and a rope for each of them would be their just merit!" And he smote the clapboards of his house with a heavy cane and a resounding whack; and the dust flew.

He also had certain unpublishable words that scorched the air as they flew, even as do lightning bolts, and evil was the smell thereof, relative to the doings of men of meat who sold great sales thereof to the allies at a price, and in the vacancy thus created found argument for jacking up the price of what was left to their own folk. "These men first make a scarcity and then exploit it; and no man goeth to market in hope of getting food for his little ones at a price that he hath money wherewith to pay. What shall be their portion when for them at last comes eternity?"

He also was unable to find voice at all for many moments; and when he found it the neighbors round about regretted greatly, on learning that his wife had been unable to buy more than 10 pounds of sugar at one time at the grocery, and for that must pay 10 cts. or even more per pound for it, which one time had cost but four and a half, and the rise in price did not produce to the common people one pound more in quantity, and but added one more brick to the burden of dead weight that already they were carrying, and which was slowly crushing them to earth.

Then that certain man hied him to his apiary and figured long and earnestly over the products thereof whereby he might lighten the burden of those sugarless folk and of their foodless children? Oh, no! How much he might add to *his* price at which he sold to them—and get away with it. John Preston True.

Boston, Mass.

Garage Good Place to Advertise

Altho I am not a beekeeper, still I have taken Gleanings for a number of years, being especially interested in the "Home Department."

In our garage business we are often asked concerning some good place to go, for the city folks love to drive fifteen or twenty miles into the country if they only have some object in view. So on reading E. R. Root's article, "Selling Honey by the Roadside," it occurred to us that there are any number of garage men who would be pleased to have a neat little sign hung up in their garage stating that honey may be obtained of John Jones at Pleasant View Farm, fifteen miles out on the Farrington road.

The average garage man likes to cater to the wishes of his customers, and we believe he would be glad to co-operate with any beekeepers in the way we have suggested.

Peoria, Ill. Chas. L. Turner.

Proving the Food Value of Honey

My sister's little girl is two years old. She eats honey before, at, and after meals. She calls it honey pie. She is as strong and healthy as any baby in Iron County. She will walk from flower to flower trying to catch the bees. If one stings her she will cry for a few minutes, then try to catch another one.

A youthful but convincing honey "saleslady."

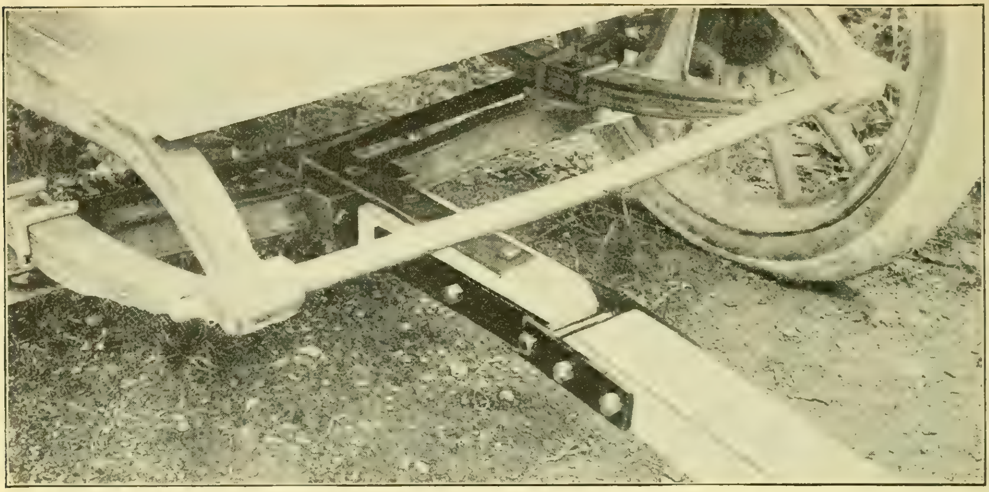
When Gleanings comes to the house we have to let her look at every picture before she is satisfied. People ask what we give her to make her so strong and healthy. We answer: "Plenty of pure air, sunshine, and all the honey she wants and when she wants it." Then we sell a ton of honey for some other baby. She is not only our honey girl, but she is our sales lady.

M. L. & E. F. Skougard.

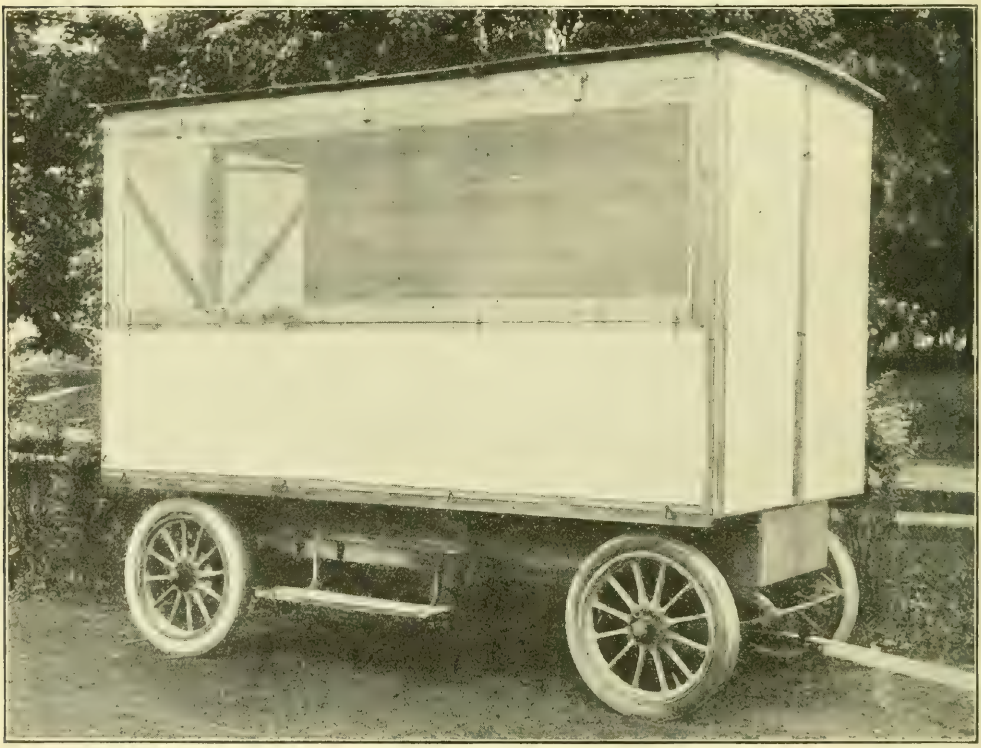
Parowan, Utah.

My idea is to have bees in excellent condition, and of course the flora is necessary for a good crop. In this section (Southwest Missouri) we are going to ask 20 cents for comb and 15 cents a pound for extracted. Claude Barker.

Avilla, Mo.



The chief problem in converting an old car into a serviceable trailer is to make it "track" the car ahead that is pulling it. The heavy steel straps bolted to the "tongue" are extended back of the axle, and there connected with one of the steering-arms by two more steel straps. The length of the two "arms" must be the same, of course.



Canvas extracting-room built over an old touring-car converted into a trailer. There are two floors made of 1½-inch lumber, the lower one just the size of the frame of the chassis, and the upper one, twelve inches higher, is six feet wide. The space between which may be used for carrying supers, supplies, etc., is closed at both ends by a hinged door.

The framework above the floor is in sections, which, being held together by Van Deusen hive-clamps, can be quickly taken apart and stored away when the trailer is wanted for other purposes.

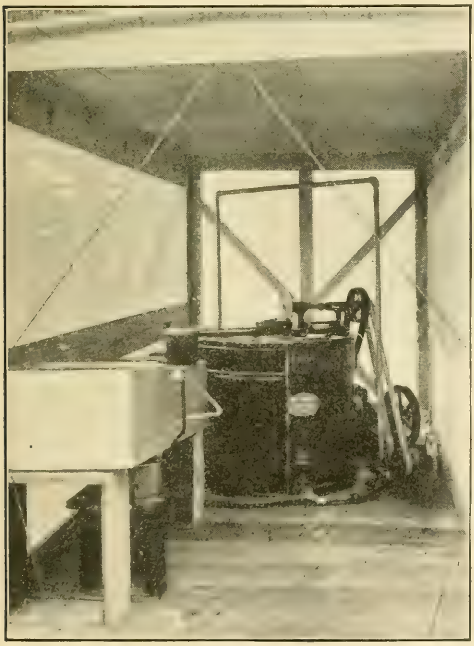
EXTRACTING ON A TRAILER

A Sectional Canvas Building on an Auto Trailer, Large Enough to Hold a Complete Extracting-Outfit

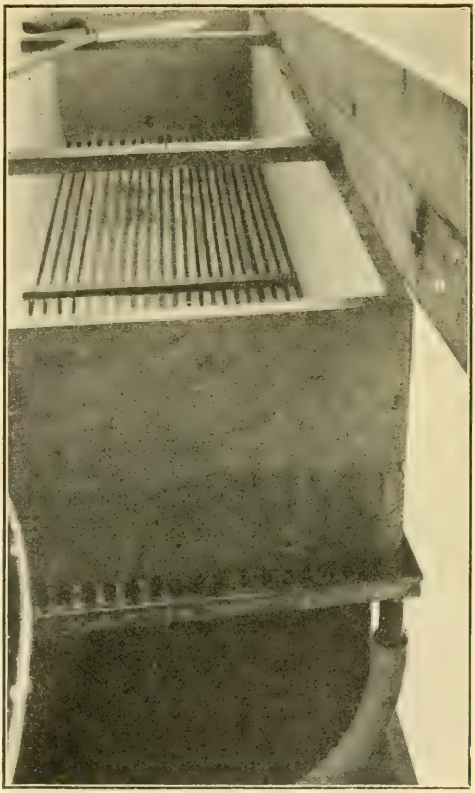
By H. H. Root

Up to last year we did all of our extracting at a central plant here in Medina, hauling the full combs in and the empty combs back again to the five or six apiaries. This year we conceived the idea of a portable extracting-house. An old touring-car that had long since passed its days of usefulness was available, so we decided to build a trailer and erect thereon a sectional canvas building in which to do the extracting.

The platform we constructed of 1½-inch lumber. On account of the fact that it was necessary to go beyond the wheels to get the necessary width we decided to make two floors, the lower one 33 inches wide resting directly on the channel frame of the machine, and the wide floor 12 inches above it. The two floors were nailed firmly to 2 x 12 sills, the back ends of which were cut away to conform to the curve of the chassis frame. This platform we bolted firmly to the chassis with ½-inch iron rods, the lower ends of which were bent to hook around the lower edge of the frame. The upper ends extended up thru the upper floor, where they were cut off flush with the floor. Nuts turned down solid made the platform absolutely rigid. The space between the two floors is 12 inches deep at the front end (tho not quite so deep at the rear), about 30 inches wide and 12 feet long, giving plenty of room for carrying supers, supplies, tools, etc. At each end is a hinged door.



Interior of the extracting-room on wheels. The capping-box stands near the front on the left. The empty space at the right is for the full and empty supers. Back of the eight-frame extractor are the engine, clarifying-tank, water-can, etc.

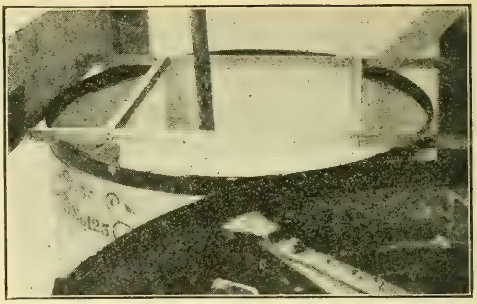


The capping-box is merely a long box a foot high and about nineteen inches wide, with a slatted bottom. This stands in a shallow galvanized tray, in the lowest corner of which is soldered a tube for the hose connection to the pump. The same pump, therefore, drains the extractor and capping-box. No attempt is made to melt the cappings, for the box is quite large enough to hold the accumulation of a whole day.

The room on top is made in six parts, consisting of the two sides, the rear, the roof, and the two canvas-covered doors at the front end. The upper part of each side, as shown, is made of heavy galvanized screen 36 inches wide, with canvas 30 inches wide covering the lower part. The screens are tacked to a separate frame, hinged in the middle, so as to permit swinging open at the top at any time it becomes necessary to free the building of bees. The rear end is a solid framework covered with canvas. The roof is made of thin lumber, ¼ inch, nailed on to four cross-pieces, which are a little higher in the middle than at the outer ends, and roofing paper tacked on to make it water-proof. The front end is closed by two canvas doors. In case of rain there is a canvas curtain on each side that can be rolled inside the screen, thus keeping the interior dry.

The room inside is 6 ft. 4 in., in the clear, from the floor to the roof. The different parts of the building being held together by Van Deusen hive-clamps, the whole structure can be very quickly taken off when the trailer is needed for other purposes.

Such an extracting outfit is not expensive. An old touring-car ready for the scrap heap can be purchased for $50.00 to $100, depending on the condition of the tires. We used 162 feet of lumber in making the platform, 64 feet for the framework of the walls and roof, 30 yards of canvas, and 8 yards of heavy galvanized screen.



Gravity method of clarifying. A large cheese-cloth bag is supported in the tank. No honey is drawn off into cans until the tank is full, and then no faster than it is pumped in. All bits of cappings float to the surface of the bag, hence the cheese-cloth does not clog up. A heavy wire hoop in the bottom of the bag overcomes any tendency of the cloth to float. The honey is drawn off into cans thru a funnel in the floor.

There are plenty of arguments in favor of the central extracting plant, and just as many, perhaps, for the portable plant. Up to this season we have had but little experience with the latter plan, but we are trying it this season. So far we are very well pleased.

QUALITY VS. QUANTITY

Don't Extract the Last Drop and then Feed Sugar; Sell Only the Best and thus Secure the Highest Price

By Arthur C. Miller

THERE is a constant and steadily increasing complaint about the low price which the producer gets for his honey, and I contend that the producers are to blame. For that statement I shall doubtless be taken to task; but I am so sure that I am right that I repeat, it is the producers' own fault if they do not get a satisfactory price for their honey.

In making these statements I am speaking of general and usual conditions and not of exceptional conditions such as those caused by the present war, which has raised prices, or the accidental glutting of some market, which sends them down.

The generally accepted reasons given are over-production and under-consumption. The prescribed remedy has been to endeavor to increase consumption. Reducing production has seldom, if ever, been suggested, perhaps because of the improbability of getting the beekeepers to unite on such a plan. So each individual keeps merrily at the task of skinning the bees of the very last drop of honey and then feeding sugar to take its place. I hope to show that this baneful practice is one of the greatest of several causes of under-consumption and low prices.

It comes about in this way: The beekeeper having by precept and example been taught to work for large per-colony yield, tries to secure every possible drop of honey—good, indifferent, and poor; the good because it sells well, the indifferent because it also sells, tho for a little less, and the poor because he has been taught that such honey is bad for the bees and can be sold for something. Some poor honey may be bad for the bees, but I question if it is often the cause of harm to them. I do know that I have had just as successful wintering on some blends of poor honey and honey-dew as I have had on the best honey or on sugar stores. Much honey which the beekeeper considers poor in a merchandise sense is perfectly good so far as the welfare of the bees is concerned.

It is the poor and indifferent honey which is at the bottom of under-consumption and low price. In his personal or local trade the producer puts forward his best; to a somewhat regular trade, in a wholesale way, he sells his indifferent grade, and the poor goes to whoever will pay something for it. Now be it known, those indifferent and poor honeys, because they are cheap, find their way into the hands of a certain class of bottlers who proceed to blend them with suitable honeys, and shortly the poor honey emerges, somewhat improved in looks, but seldom any better in flavor, and comes on to the market to compete with the "good." These bottlers are hustlers and their wares are to be found in the hands of most wholesale grocers and on the shelves of a vast army of retailers. The prices are attractive because they give a good margin of profit to both the wholesaler and the retailer. The goods reach the consumer at a price not much below what he would have to pay for a really nice article, and often far above what the producer sells his good honey for to his home trade. He has unwittingly put his poor honey in direct competition with his good. But the evil stops not there. The majority of purchasers consider carefully the amount of their expenditures, and the few pennies lower price of the inferior article often decides their selection and the poor honey goes on to their table. Even tho they do not know good honey from poor, the result is pretty much the same, for they do not eat as freely of the poor as they would of the good; and if perchance they have known good honey, they abandon in disgust the bottled honeys of commerce and turn to other sweets. The poor and indifferent honey of the producer has operated to bring about under-consumption. It would have been far better if the poor honey had been left in the hives for the bees.

Even if all beekeepers could be made to see that, and then try to live up to it, the trouble would not cease, because so many producers do not know when honey is "poor" in a commercial sense.

I know of not a few fine-colored, heavy-bodied honeys, totally unfit for table trade. One may be acid, another peppery, another with some peculiar or repellent flavor, and so on. Now, the producer may become so accustomed to one or another of these that he really likes it and believes it a fine article. Living in some place more or less distant from trade centers, he seldom has the opportunity to sample different honeys or compare them with his own. Even those beekeepers who frequently visit the markets seldom try any of the honey on sale. They look at the style of the package and the label, and perhaps ask a price here and there, but do not buy and sample it. I seldom see a new brand in the cities in which my honey sells but I try some, and I keep track of how it takes with the consumers. So I know what I am talking about when I tell you of the poor honey and its travels. And when I say all producers would be better off if more of the "off" grades of honey were left with the bees, and less sugar bought and fed, I am not speaking idly.

Right here I want to call attention to an editorial in the January Gleanings, page 10, top of first column. It says: "As a matter of fact, however, every large producer has a certain amount of dark honey not quite up to grade." Then follows something on imperfect comb honey, and advice to sell both these commodities to transient trade. How in the name of reason the editor could make such a suggestion I cannot conceive. If there is one place above all others where a beekeeper's products should be of the best it is at his door, and the passing stranger is the very one whose palate should be tickled and eye pleased with the nicest honey possible. They scatter over the land, and it makes a vast difference to us whether they speak well or ill of us and our goods.

I have yet to see any dark or below-grade honey bearing the label of the Editor's company; and if they won't peddle it, certainly the producers should not.

As expressed, the editorial quoted is positively mischievous advice, and I sincerely hope it will be promptly corrected. It is not pleasant to take back water, but I believe the Editor is big enough to do it.

The beekeeping world does not look on New England as a whole as cutting much figure in honey production, and this particular corner is considered about as poor a pasture as any part of it. However, we have a very diversified flora, and no small part of it honey-producing. We get here several different flows of "surplus" proportions. A few localities give as many as four or even five periods of some surplus production, others only two. Most of the territory where beekeeping is worth while at all gives a more or less continuous yield, sufficient to keep the colonies in fair shape. These conditions are not peculiar to this region but are found over a wide area, only they are not always appreciated. On the other hand we have years of very low yields, or almost total failure, the same as other places do. With that statement of conditions, which are not so radically different from Mr. Crane's country (I spent quite a bit of my boyhood in northern Vermont), I will tell just what I do to lessen the need of sugar-feeding and to carry out the advice I have given.

We have here several honeys which are very pleasant to some persons, but repellent to others. Some are of fine body and color, but so pronounced in flavor that one quickly tires of them. Several of these make up no small part of some of our "surplus-producing" flows. Once all were taken and put together, the aim being to get the largest possible yield. Some years the honey sold readily, "repeat orders" quickly exhausting the supply. Other years it was almost impossible to give the honey away, owing to the preponderance of poor honey in the mixture. Afterward the various flows were kept separate, so far as possible, and each kind sold by itself; but this caused trouble, for customers wanted the kind they had before, and you were out of it, perhaps, or forgot what kind they had. Following this was an attempt at blending, and it was a long and troublesome job. Some honeys would not do at all. Others were all right if only a little of them were used; and it was right at that point that I decided I could far better afford to take a small per-colony yield and leave the undesirable honeys with the bees, rather than to take everything and attempt to sell it and feed sugar.

The next thing in the evolution of my beekeeping methods was to learn thoroly the honey sources about each apiary and work for the surplus from the most desirable, just as the "clover-district" men bend every energy to get that crop. This was not as simple as it sounds, for flows overlap, and not infrequently some previously quiet and well-behaved plant becomes obstreperous and bursts into a sea of bloom and raises havoc with our plans, or gives us an additional flow of a desirable honey. But on the whole the practice is working satisfactorily. The bees are manipulated for the desirable honeys, and are allowed to keep the undesired sorts. Sometimes the latter are taken away in brood-sized combs, or are extracted and returned later, either for brood-rearing or for winter stores. It will be noticed that I am speaking almost wholly of extracted honey. This is not a good comb-honey region, but I do secure comb honey from one flow and occasionally from a second. When I do get it, it sells for a fancy price, so even a small per-colony yield in pounds brings a good per-colony cash return. Just keep the cash returns in your mind's eye and think less of the pounds per colony.

Neither Mr. Crane (page 48, January) nor any other beekeeper will adopt my plan, nor even think favorably of it, until they change their ideals from quantity to quality and do it so thoroly that they will err on the side of leaving some possibly good honey with the bees.

You ask, "Does it pay?" That is the yardstick by which we do most of our measuring. Yes, it does pay. Suppose our average has been 50 pounds per colony, and we fed 10 pounds of sugar, and our honey sold for some medium price or for as much as the neighbors got. Now suppose we drop the yield to 40 pounds, feed nothing, and sell our honey for 20 per cent more than the highest-priced honey on the market, and have to keep putting out new yards to meet the demand. That is me. Now who wins?

Providence, R. I.

[Perhaps we do not get your viewpoint; but we see no reason why we should "back water." It would be folly to sell these dark honeys along with other good honey to a distant market that does not know the producer. These off grades can be sold around home for less money; and then if an explanation is made that they are pure there is no harm done. Some people prefer these dark, strong-flavored honeys to the light-colored milder-flavored honeys. Around home one can pick out these kinds of customers. There are many people, foreign bred, who actually prefer these dark honeys. See bottom of page 135, second column, February Gleanings.—Ed.]

The First Man Set the Price Too Low

There is not very much honey produced or sold in this section. The price on comb honey in the surrounding towns ranges anywhere from 15 to 30 cents. In my home town the price is from 15 to 20 cents. We could get more, but one producer started early in the season to sell at 15 cents and that kept the price down.

Extracted sells at about 15 cents. There is some chunk honey sold also that retails from 12½ to 18 cents. If the beekeepers would only come together and establish a price it would be much better for all.

I started last year with 17 colonies. I now have 43 and have made about 1000 pounds of surplus. The season is very short here, lasting only from May 1st until about the 20th of June, then we have a small flow in the fall. The flow in the spring is from tupelo and poplar, holly, and persimmon. They all blossom near together and the bees store very rapidly.

Waverly, Va. J. A. Bryant.

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

"I am anxious to procure the best bees possible for the production of honey. I care nothing for color, very little for stings, but I do want a large quantity of honey which I can sell for cash. Of course the bees should be good winterers, otherwise they would not get strong enough for the harvest. My main dependence for surplus comes from the clovers and basswood, with a small surplus from fall flowers, occasional years. Now, from your forty odd years' experience, tell us just the bees which will be best for me to keep in my locality."

Our questioner tells us little as to his wants except *quantity* along the honey line. For this reason we shall have to guess somewhat. From my standpoint, a true solution depends upon which kind of honey we are producing—section or extracted. If I were producing extracted honey altogether I think I would select the darker Italians, or those from queens reared two or three generations away from mothers imported direct from Italy, allowing the young queens reared to mate with whatever drones there were about the apiary, whether from Italian, hybrid, or black stock.

If I were working for comb honey in sections exclusively, then I would procure a good queen from some best stock of the orange, or what is termed golden variety of the Italian bee, rearing all queens from her, and, as before, allowing them to mate with any drones they may chance to meet, since our questioner cares "very little for stings." Some of these young queens, either from the dark or orange variety of Italians, would doubtless give quiet and peaceable workers; but the majority of such promiscuously mated queens would give bees which a beginner would rather avoid. Nevertheless, if quantity and cash are what we are after, such direct crossing generally gives the greatest vigor. All my experience goes to prove that thorobred orange-golden Italian queens, mated to drones of either black or hybrid stock, give bees equal to the very best for section-honey purposes. I should prefer not to have these queens meet drones from young queens reared from imported mothers, for the reason that, as a rule, workers having much imported blood in them do not cap their honey nearly so nice, white, and captivating to the eye as do those having more of the golden, hybrid, or black blood.

The beekeeper who regards color as an index to quantity and cash in honey production is quite liable to disappointment, no matter what that color line may depend upon. Careful selection and breeding along any line of bands or stripes will doubtless bring some improvement; but nature has so ordained that, when queens are reared under the most favorable circumstances which go toward bringing forth the very *best queens physically*, the controlling of the drones with which these best queens shall mate is almost beyond our reach. Drone control, so far, is almost beyond the best of us; and when we can come the nearest to our ideal, much feeding and rearing out of season tends toward, not the best, but toward only a physically weakened queen. Therefore, the object of beekeeping being the quantity and cash from either section or extracted honey, the honey-gathering qualities of the bees employed is the paramount requisite.

To sum up I would say, first have the queens mate with drones as distantly related to the queens as possible; second, use queens quite closely related to imported Italian stock, where working for extracted honey, for there are no bees in the world, in my opinion, that excel those one or two generations from imported stock for honey-gathering. Third, where white capping of the combs in sections becomes one of the great objects to work for, then choose the orange-golden Italians.

But I hear some one saying, "If no bees in the world excel those a generation or two removed from imported stock as to honey-gathering, and the golden Italians possess the desirable trait of superior work in capping their honey, while they are in no way second as to honey-gathering qualities to those you recommend for the production of extracted honey, why use the darker bees at all, as there can be no objection to the whiteness of cappings in the case of extracted honey?" As this is along the line of what one of our best apiarists said to me only a short time ago it may be well to look into the matter a little. I am well convinced that the dark and golden Italians, other things being equal, will gather equal amounts of nectar from the same field, but the dark variety will give the greater amount of extracted honey. I think I can give the reason for it. Have we not been taught all these years, from blind Huber's time, that it takes twenty pounds of honey to produce one pound of wax, as Huber ascertained thru his experiments? While the beekeepers of this twentieth century are inclined to modify these figures a little, yet all close observers know it does take honey to produce wax, on the same principle that it takes corn to produce lard. Now, the white capping of combs takes much more wax than that transparent capping the dark Italians use, where the combs in sections look so watery and uninviting; hence the extra honey used for the wax, where we have the white capping, is saved for storing by the darker bees which do not use half the wax in sealing over their combs.

Borodino, N. Y. G. M. DOOLITTLE.

* * *

Letters from a Beekeeper's Wife

On the farm, Aug. 1, '17.

Dear Sis:

Hurrah! Only a week to wait before we see you! It seems too good to be true; but really, if you do not come soon, Billy will surely burst with impatience.

I am so glad that the strenuous days of honey-flow are over before your visit—now we'll all have more time to enjoy it. I have had comparative leisure for the past two weeks, but Rob has been concerned about his bees and has been going over every colony in all the yards looking for disease. He found a couple of colonies in June that he suspected were foulbroody, but we were too busy then to do much about it. He wrote right away for the bee inspector to diagnose the case, and he arrived several days ago. I never was more amazed when a young fellow of college age drove into the yard and announced that he had come to inspect the bees. I had expected a man of years, whiskers, and experience! I watched Rob carefully from the tail of my eye, but he showed no sign of surprise and was very cordial and withal respectful to the youngster, who couldn't have been any older than Harriette. Rob and Mr. Tait, the inspector, went off to the yard, and when they came back I realized immediately from their interested conversation that I was all wrong to turn up my nose because of the inspector's youth. He had evidently had a good deal of experience with brood diseases in a college laboratory and also among beekeepers, and he knew what he was talking about. Rob's interest and respect deepened as it always does before a college education. Poor dear! he will never cease regretting that he couldn't have it, and he never seems to realize that he is twice as well educated as many college graduates that I've known. "No," he says, "they have absorbed something from the college atmosphere that I can never have." If all that "atmosphere" were wholesome, the case might be against Rob.

Mr. Tait proved to have a keen mind and gave Rob lots to think over this winter—problems that they were working on at his college. One problem that interested me and that I should love to work out was whether bees are most attracted by the odor or the color of flowers. He found, alas! that we have an infectious disease in our Haymaker yard—European foulbrood. It's as bad as whooping cough for children, and unless measures are taken to prevent its spread it will go thru a whole apiary. It won't go thru ours, for Rob is being extremely thoro, altho we have very good Italian stock in our yards. He has just ordered enough good resistant Italian queens to put one in each diseased colony and thinks that he will requeen all the apiaries next spring. He just brought in the queens from the diseased colonies to show Billy before he guillotines them.

Mr. Tait has been inspecting for several days now in our neighborhood and seems to be making our house his headquarters. He and the girls find a great deal to say to each other; and, altho I like him very much, I'll breathe easier when he goes. I suppose no mother is ever ready to have her girls grow up to the young-man-caller stage.

Poor boy! he has had his troubles with one farmer here. Isn't it strange that some people resent offers of help, even from the State? Rob has been specially anxious about this farmer's bees for he thinks that apiary is the source of infection around here. Several times he has offered his services but the farmer has always refused to let him go over the colonies, and has told him he knows that this foulbrood is only a scare. When Mr. Tait came Rob urged him to go over there first of all and he did, but the suspicious old fellow ordered him off the place with a shot-gun and said he wouldn't have any "young cub" look at his bees and tell him what to do. Instead of leaving, that tactful and brave youth engaged Mr. Spaulding in conversation concerning bees, entirely ignoring the shot-gun. I think the old fellow must have admired the boy's courage—at any rate, after half an hour's talk he actually invited him in to look over his colonies to see whether there was disease present! I never saw Rob so pleased over anything—every few minutes he chuckles to himself and I know he is thinking how Mr. Tait got around crusty Mr. Spaulding. Tomorrow Rob and the inspector are to spend the day treating the Spaulding apiary.

Billy considers Mr. Tait a hero, and the girls talk of nothing but his victory. I wouldn't mind a change of subject myself, and shall be delighted when you come to create a diversion. Of course that isn't the only reason I am so impatient to see you!

As ever,
Mary.

* * *

My Last Year's Experience in Beekeeping

After enjoying and financially profiting by a year's reading of GLEANINGS it seems a duty to give a little of my experience, hoping that it may be of benefit to others. I am drawing near my "Forty Years Among the Bees," and if I had the faculty of observation and the facility of expression possessed by the venerable C. C. M. or the alert and versatile Arthur C. Miller, the rather unique experience of caring for about 20 permanent apiaries, some of which are more than 50 miles apart, would doubtless make interesting reading.

Altho located in a section where great profits can never be expected, I have found the returns very satisfactory, the work pleasant, and the acquaintances formed, most delightful and inspiring. The constant study involved has kept me younger, as it unfolded a new world in the study of botany and biology. Even the unwelcome advent of disease gave a chance for a little work in elementary bacteriology, stimulating to more intelligent work; and, altho there was a temporary loss, still my best record last year was from a yard that had suffered quite seriously a year before.

So it is with pleasure that I report the past season as the best in this locality for six years. For this there were two reasons—the excellent work of Dr. Gates, State Inspector, who by his courteous and tactful methods has placed beekeeping on a higher and safer level and also the fact that constant rains prevented about half of the usual spraying. Now do not think that I condemn *all* spraying—I use a small outfit myself; but the fact remains that less spraying this year resulted in considerably less defoliation.

In all my work I saw but one bad case of poisoning. I had five colonies that were exceedingly strong and entering the supers; but a week later I found them so reduced that, even if united, they would scarcely have formed a swarm. My first thought was, "Bad case of European foul brood"—"sac brood too." Then, "Where could the adults have all gone?" A careful examination of the frames showed dead brood enough for any or all diseases—too much, in fact, for European foul brood, if one considered the age and placing of the diseased brood. The sac was evident enough; but in sac brood we expect from 2 to 40 per cent of diseased brood. Then I noted that the bald brood, while abundant, appeared to show an absence of nurses rather than a change of quality. There was absolutely nothing diagnostic except the sac brood; and as it was the wrong time of year for spraying I was completely puzzled until I called the gardener and learned that immediately after every rain a power sprayer had been used in the hard-wood forest. For some reason this forest spraying had proven nearly as bad for the bees as spraying during fruit bloom. At first the outlook seemed rather dark; but I finally succeeded in building up four colonies and even secured some comb honey in the fall.

A honey crop will always sell, and, if kept, there is practically no shrinkage or deterioration; also that, for the capital invested, no other stock than bees yields quite as high a per cent profit.

Rowley, Mass. GEORGE W. ADAMS.

* * *

Sunday Selling

In "Stray Straws," March, I notice that Dr. C. C. Miller regrets that Sunday is often the best day for roadside marketing of honey. My grandson, Robinson Newcomb, has a sign on the roadside, and it reads like this:

"Honey for Sale. Sound Sparton. No Sale on Sunday."

He can sell honey six days in the week, and still remember the sabbath day to keep it holy.

Cleveland, Ohio. SUSAN R. NEWCOMB.

FROM THE FIELD OF EXPERIENCE

Swarm Prepares, Issues, and Travels to New Home

A continuation on Swarming from page 530 July number

The swarming impulse having arisen, the colony immediately begins its plans for leaving. This preparation does not, as many suppose, consist merely in the completion of the queen-cells, but there are other matters also that must receive the attention of the bees. It is of vital importance that, after entering the new abode, the bees shall be able to begin comb-building immediately. So while an apparent state of idleness has prevailed for a number of days, the workers have in reality been engaged in secreting wax scales to meet the immediate demands of the new work.

The day for swarming arrives. There is a certain laxity in the gathering force, altho some field bees are still at work bringing in pollen and honey. Inside the hive there is an unusual commotion. Even those loaded with pollen are rushing about in great excitement. The majority of those that are to leave with the swarm are either gorged with honey or they are just loading up; for after leaving there will be great need of this honey, not only for food but also for secreting wax scales for building their new comb. A few bees, however, do not take up this burden, as they are reserved for defense work and scouting purposes.

Usually, the swarm alights before leaving the vicinity of the hive. It will be noticed that the bees on the outside of the cluster are not loaded; these comprise the defensive force of the swarm. No sooner is the cluster completed than preparations begin for the second move, which may or may not be the final one.

Often the new swarm has selected their future home before leaving the old one, but I believe this is not the rule. In one case I followed a swarm that had no home located, and they traveled a distance of two miles before alighting. Again, I followed one for half a mile and watched them enter the new home without having clustered or hardly checked their mad rush from the parent hive to the tree that they entered. Usually we may expect them to alight before leaving, and send out scouts in search of the new abode, if it has not already been selected. If they leave within an hour, they probably have already chosen their quarters. If not leaving for several hours or even a day, it is quite likely that their home has not yet been located.

I have had a peculiarly good chance to observe this matter; for, when a boy, I often knew them to come three miles across the Kaw River Valley into the heavier wooded section on our side. In every case that I observed, in which this distance was traveled, there was no home decided upon until they had alighted and the scouting force had made their report. As a rule the new location is not selected at an excessive distance from the clustered swarm. In case the new home is not chosen within a reasonable time, the swarm will make the second, third, and even the fourth flight before getting located, sending out scouts from each stop to search for quarters. Invariably, at the last clustering-place there may be found a few scouts which returned after the swarm moved on; and as long as they live, these bees will remain in that locality, true to the trust left them. The process of wax production continues during the delay in searching for quarters, so that many scales are lost; and when the swarm has moved on, small bits of comb will be found attached to the clustering-place. In searching for a home there is no certainty that a swarm will continue in the same direction of flight, for I believe that I have had swarms that left me return in a few days to decoy other bees from the same yard. If much time elapses before a place is found, the bees use up the honey in their sacs, become more active, and fly higher and further. They also are quite cross from the fact that they have nothing to do but guard work.

We will now suppose that the scouts have reported favorably concerning their new home. Shortly others will appear on the scene, and still others, until it may seem that the swarm has already moved in. This may continue for several days before their actual coming, tho the hand of man may divert them even now into other quarters. Still they often refuse the place man offers them, in favor of the spot of their own choice. Immediately before they move in, there is always a lull in the activity of the bees around their prospective home. This is due to the fact that the scouts have returned to escort the swarm.

They come at last and lose no time in establishing their quarters. The wax scales that have been prepared are utilized in the immediate construction of comb. The field force, in a very few minutes, is out after nectar; and the greatest activity prevails, all work now centering on the gathering of nectar and the building of comb. When the comb is sufficiently drawn, the queen begins her work and soon there are new larvæ to nurse as a part of the hive work.

By the ability to select, man has a wonderful advantage over nature, in that he may accomplish in a short time results that might require centuries to accomplish by chance crossing or by the law of the survival of the fittest. By selecting colonies that are the least inclined to swarm, and that are the best honey-gatherers, it is possible to advance the usefulness of the bees, within a comparatively few years, further than they have ever advanced in that line before. It can not be reasonably expected, however, that the inclination for swarming will ever be entirely overcome.

Redlands, Cal. P. C. CHADWICK.

* * *

A Queen-breeder who has Made Good

It was about 1878 that my father made his start in the bee business. I was only seven, but I remember something of the time he had in making his first transfer from an old box hive to what was then termed a patent one, and also how his first Italian queen was killed in transferring. With the second queen he was more fortunate; and noting from GLEANINGS that a few queens were wanted at the home of the honeybee, he attempted to fill the order. This first effort was a complete failure, as most of the queens died in transit. The second lot fared better and were accorded the highest praise—an order for more of the same kind.

This first check for queens spelled opportunity, and it was immediately decided that all of the bee-money should be set aside as an educational fund; for with his own studies cut short by his response to his country's call he had longed—yea, prayed—that his children might not be deprived of that which he so greatly missed. The results of this fund were most gratifying, for by its means eight children have received either a business or a college training. We sometimes lightly remark that we had our education stung into us.

As his helper in the apiary I soon learned that his ideal was to raise the very best queens; and the thousands of queens he sent out from Coronaca, S. C., bespeak his success in queen-rearing. It is a singular

J. D. Fooshe and wife, Augusta, Ga., who celebrated their golden-wedding anniversary last December.

fact that his name never appeared in the advertising columns of any bee journal. The few connections he made during the first years took his entire output. "Old customers first" was his fixed policy; and even to this day he will drive several blocks out of his way to serve a former patron.

With mother's aid he helped solve the problem of a suitable candy for mailing queens. Later he contributed his part to the perfecting of plans for artificial cells, tho of late years he has preferred to use drone comb for this purpose. Indeed, it is hardly too much to say that he has been right at the front in every advance movement with bees, either of his own accord or thru the call of Gleanings to try out this or that.

Being a true naturalist, his close communion with nature has brought him into a closer relation with God. So vital has been my mother's interest in his work and experiments that I have never been able to draw the line between what he did of himself and what came by way of suggestion from her. Their union has been most complete, and they have taken God into all their plans. This is why their golden wedding (Dec. 30, 1916) will always linger as such a precious memory.

Augusta, Ga. Frank Fooshe.

* * *

Good Things for Beekeepers at the Massachusetts Agricultural College

The beekeepers' section at Farmers' Week at the Massachusetts Agricultural College, Amherst, was well attended by beekeepers from all parts of the state, and proved most profitable and interesting.

The apicultural work at the college has been raised to a very high level by Dr. Burton N. Gates, Associate Professor of Beekeeping. The building is of concrete, and is well equipped with bee-cellar, wax-rendering outfit, honey-extractors, etc. The museum, which probably has no equal in the country, contains among other interesting things several original hives used by the pioneers of American beekeeping, such as Langstroth, Dadant, and Quinby, also an interesting collection of straw skeps, some of which came from over the water. For those of literary inclinations the splendid private library of Dr. Gates in the Entomology Building was available. This library contains many very old and rare beebooks—French, German, English, and Italian, as well as the first editions of some of our early American writers on the subject.

The extracted-honey exhibit this year was especially fine. There were samples of many varieties—clover, of course; sumac, goldenrod, clethra, orange, sage, wild thyme, buckwheat, etc. There was some very nice granulated clover honey of a fine smooth grain.

Wax in all shades and shapes formed an attractive and interesting part of the exhibit.

The first lecture was on Tuesday morning, March 27, by Dr. Gates, followed by Mr. J. L. Byard, Superintendent of the Apiary, which lecture was primarily for beginners. Dr. Miller's bottom-board and the swarm-catcher in use at the College were demonstrated. The swarm-catcher consists of a box made of slats perforated with round holes, bound at both ends with tin and set on a pole lengthwise. It contains a frame of brood. The bees enter very readily thru the open end and the holes, and will remain permanently if desired.

A class in beekeeping at the beekeepers' section of Farmers' Week at the Massachusetts Agricultural College.

Tuesday afternoon Miss Shapleigh, of the Department of Foods and Cookery, Teachers' College, Columbia University, New York, demonstrated the uses of honey in a very able manner. Tho honey can not *always* be used in place of sugar she showed many ways in which it could be successfully substituted. During the afternoon she made muffins, cake, baked custards, boiled frosting, and sandwich filling, using honey in each. When cooking with honey half a teaspoonful of soda should be used to counteract the acidity of the honey.

The program Wednesday morning included lectures by Dr. Gates; Mr. G. P. Wood, of Peekskill, New York; P. W. Latham

FROM THE FIELD OF EXPERIENCE

The apicultural department of the Massachusetts Agricultural College.

(son of Allen Latham), and L. R. Smith, of Hadley. Dr. Gates spoke on comb and extracted honey production in Massachusetts, advocating the production of extracted as more natural to the floral conditions of this state, more economical and more profitable.

Mr. Latham presented some very interesting facts and figures which had been secured thru answers to inquiries received from 57 beekeepers thruout the country. This set of figures proved most conclusively to those present that Massachusetts is not producing nearly as much honey as she could and should. Especially is this true because the wholesale selling price for both comb and extracted honey is higher than in any other state, and the cost of production no greater. Massachusetts honey is mostly sold at retail. On account of lack of uniformity in packing, it is little in demand at wholesale. Mr. Latham is of the opinion that organizations should adopt trade labels and a certain standard in regard to quality of package.

Miss Dorothy Wright, of Lowell, a very intelligent and attractive woman, spoke very charmingly, emphasizing the desirability of scientific cleanliness in the preparation of honey for the market and the consideration of honey as not merely a substitute for sugar but a new (in the sense that heretofore it has not been in very general use) and delicious food.

Miss Josephine Morse, another Bay State beekeeper, told of a short course in beekeeping given by her last summer. This was followed by a demonstration of wax-rendering by Mr. Byard.

Thursday morning a joint session was held with the Hampshire, Hampden, and Franklin Beekeepers' Association. After the business meeting at which Pres. O. M. Smith, of Florence, and Sec.-Treas. B. N. Gates were re-elected, Mr. Smith gave an address on the packing and handling of honey, and showed a wax-extractor with which he produces a fancy wax with a minimum of labor. Dr. W. P. Brooks, Director of the College Experiment Station, told how to get a good flow of nectar. He gave much valuable information about the treatment of the soil for different crops.

The beekeepers' part of the program ended with a demonstration by Dr. Gates in the honey-extracting room.

JOSEPHINE MORSE.

So. Lancaster, Mass.

Breed from the Best Colony of the Best Strain

An aunt of mine who was quite a student of human nature, and a very successful physician, used to say that it is better to marry the poorest of a good family than the best of a poor family, even if the former is not so bright, as the children will stand a better chance of being bright. This corresponds somewhat to G. W. Phillips' idea of

FROM THE FIELD OF EXPERIENCE

"soma plasm" and "germ plasm," page 27 of the January number.

To apply this to bees, say A has 100 colonies of a good strain of bees, 98 of them producing 300 pounds of honey each, and the other two producing 100 each, while B has a poorer strain of which, under the same conditions, 98 colonies produce 100 pounds each, and the other two 200 lbs. each. According to Dr. Fowler's idea it would be better to breed from the poorest of the good strain, altho they produced only 100 pounds each, than from the best of the poor strain that produced 200 lbs. each.

In the March number, page 223, there is a picture of a cow, "Sophie," and her calf. If Sophie had a poor calf that did not give quite as much milk as one of the best of an ordinary scrub stock, which would be the best to breed from—the poorest of the best or the best of the poor that seemed to be the better of the two?

Let us now consider heredity and environment as to gentleness. I have a hen and thirteen chickens (6 weeks). They are so gentle that when I weigh them once a week I can pick up every one and put them in a box without chasing after any. Is that heredity or environment—"soma plasm" or "germ plasm"? The same chickens raised differently might be very wild. So bees from a gentle strain can be made very gentle or very cross.

Again, we might tame a wolf much tamer than some dogs; but would not the young from the tame wolf be more apt to inherit wild tendencies than the young from the vicious dog that was made vicious by its environment?

I propose that, instead of breeding from the best swarm or from the best strain, we breed from the best swarm of the best strain and leave the scrubs alone, thus taking advantage of both heredity and environment.

Hammonton, N. J. C. E. Fowler.

* * *

What Shall We Do With Them?

To my mind the greatest hindrance to establishing as well as raising the price on honey to keep pace with other table commodities is the so-called farmer beekeeper (and they don't all live on farms)—the man who a few years ago started with one colony, and with perhaps the increase of one colony he has more honey than he wants for home consumption. This surplus honey he gives to his children, neighbors, or friends. Perhaps in another year he has more than he wants to dispose of in this way, and he thinks of selling some of his crop. He is a man who, if you offered him half a cent less than the market on his chickens, eggs, or butter would be highly insulted; but in case of his honey he does not recognize that it, too, has a market value, but seems suddenly to become conscience-stricken and dumps his honey on the market at half to two-thirds the market price. I saw as fine comb honey as any one could produce dumped on to a local grocer at ten cents a pound in trade. This was in an Ohio town where I lived for several years. At the same time I was getting twenty cents a pound at the house, or $4.00 a case.

What shall we do to educate or eliminate the farmer or small beekeeper? We have them wherever I have been.

We have another class here, of larger producers, who sell the grocer all they can and then canvass the consumer, selling in small lots at the same price that they did the grocer, thus breaking the price and injuring the grocer who assisted him in handling his crop!

Wichita, Kan. O. J. Jones.

* * *

Impossible to Keep to the Old Price

I run entirely for extracted honey and put it all up for market in 2-pound friction-top cans.

For the past ten years I have charged a uniform price of $3.00 per dozen cans. Last year I paid a concern in Baltimore $18.50 per 1000 for these cans. This year the same company asked me $45.00 per 1000 for the same cans. I have now purchased from another large concern for $37.75 per 1000. This price is more than double last year's price.

I shall raise my price to not less than $3.60 per dozen cans. With the high prices now charged for all other foodstuffs, I expect to have little trouble to sell my output.

Factoryville, Pa. Earl Seamans.

* * *

Some of our Short Cuts

We generally do our extracting during August. After this is over we stack the trays and supers of empty combs eight high, zigzagging the corners to let in plenty of light. Moths prefer darkness "because

FROM THE FIELD OF EXPERIENCE

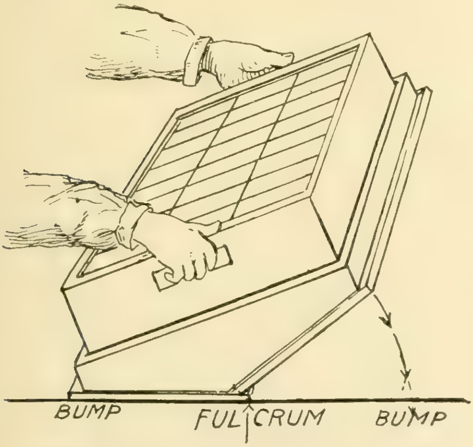
G. J. Yoder's Apiary, Meridian, Idaho.

their deeds are evil." We put a queen-excluder under each stack of supers to keep the mice out and another one on top to furnish shade from the sun. If it rains, additional protection is needed.

In November we store the supers under shelter for winter. So far we have always had them cleaned out nicely without any trouble from moths.

FREEING SUPERS OF BEES.

Years ago when Rambler described his "jouncer" (a small skeleton framework in which a super could be placed for jarring the bees out) we liked it so well that we have been following this method ever since. Last season we accidentally hit on a new way. On our hives we use gable covers. We put one of these covers on the ground upside down, take off the super, brush the outside bees off, set it down into the cover, then rock the cover from side to side a quarter to half a minute. A little practice determines the time required, also how hard to bump the sides without breaking the combs out of the sections. After lifting the super out, emptying the cover of bees, we can repeat the operation if necessary.



Yoder's way of "bumping" bees out of supers.

ENEMIES OF BEES AND HONEY.

Last season in April, May, and June, the English sparrows invaded our apiary in the morning while it was cool and damp. They would get in front of the hives, pick up the bees, and then make for their nests in which were young birds. On examination we found their crops crammed full of bees and grain. In some of the birds fully three-fourths of the contents of the crop was bees. After the weather became warm enough so the bees could fly well, the sparrows left.

The yellow-jackets were very numerous last year, carrying away hundreds of pounds of honey. The pesky fellows were so smart that we could not avoid getting some of them into the shipping-cases where no doubt a few lived to the end of the journey. We found a number of their nests, and during the cold weather of November we dug them out of the ground about a foot below the surface. We found thousands of the insects, also thousands in the larval state. They build their comb horizontally, using only the under side for brood. The combs are fibrous like the nests of hornets.

Meridian, Idaho. G. J. Yoder.

STRAY STRAWS

Dr. C. C. Miller

“TWO mistakes are frequently made by the beginner in sweet-clover growing. One of them is to delay cutting too long, and the other is to cut too low. The first fault results in a coarse hay of poor quality; the second results in killing the plants and preventing a second crop. . . This second crop is the more valuable of the two, as it is the one which is to produce seed.” This is an interesting item, not only because of its valuable information, but because it appears, apparently as editorial, in so valuable a farm paper as *The Country Gentleman,* fully recognizing sweet clover as a forage plant, with no reference whatever to it as a honey-plant.

R. F. Holtermann, your explanation, p. 526, how the bees, when left to clean up foul-broody combs, carry the disease on their bodies to all parts of the hive, shows clearly the danger. But when those same bees, after having the matter fully explained to them, go right on and clean up the combs without bad results, what are you going to do about it? Yes, you're right; the dead larvæ were all over my yard, and after a rain you'd see them swollen up on the entrance-boards, but somehow they didn't seem to get into the cells. I don't know how mild or how severe you'd call the European foul brood I had; but I do know that so long as it was left to its own course it was a vigorous traveler, and I am strong in the belief that no wide-awake beekeeper should ever let the disease get any more of a start than it had with me. Now look here; the Tommies are so nice to the Sammies nowadays that I can't afford to have any rumpus with a Canuck like you; but “when this cruel war is over” I make no promise what I won't do to you.

It is surprising, as said on p. 511, to note what “pep” one or two frames of hatching brood will give to a medium colony. And yet not so very surprising when you do a little figuring. Suppose there is brood in a frame to the amount of 16 inches by 8. On both sides there are 56 cells to the square inch; 16 times 8 makes 128, and in 128 inches there are 7168 cells. So two frames would give more than 14,000 bees, and that's quite a colony. [The actual figures of the number of cells to a comb show that there would be at least three pounds of bees added to the colony. If it had two pounds already it would make about five pounds in all. Such a colony we should consider of fair strength; but, of course, for real honey production we ought to have them much stronger than this. Eight or nine pounds would not be too heavy; but in the production of extracted honey the five-pound colony will do very fair work, and a ten-pound better; but a few pounds would hardly amount to anything left by itself. The giving of hatching brook works nicely both ways. The colony that gave up the hatching brood would have swarmed prematurely, and the one to which the hatching brood was given is that much of a boost. In other words, it is put in a position where it can be an earner rather than a ing us how the thing came out.

The Gleanings bunch has made a good deal of to-do about getting queens fertilized in a big greenhouse, and a good deal of space has been occupied in telling of the failure. Would it not be better to occupy that space with successes instead of failures? Well, it may or it may not be wise to make further experiments in the way of fertilization in confinement, but I am most emphatic in the belief that space is well occupied in telling of failures. If mistakes and failures were fully reported it would save some of the rest of us from repeating them. The truth is that we don't like to 'fess up when we've done some fool thing. So, thanks to the Gleanings bunch for telling us how the thing same out.

“All our honey is snow-white and of exquisite flavor. The most of the honey is from white sweet clover.”—*Dr. E. A. Morgan,* p. 516. “The flavor of sweet-clover honey is so strong that it is not very popular in our markets.”—*J. M. Buchanan,* p. 521. Now, what do you know about that? Is it the difference between South Dakota and Tennessee, or what? We don't have pure sweet-clover honey here; but we do have white-clover honey with a vanilla flavor, and I suppose that flavor comes from sweet clover. It's delicious, but I've always had an idea that too much of that flavor might not be so good. Let us have more light from any who have the simon-pure thing. [As a general rule the color of honey grows lighter as we go further north. For example, we find that white clover is a little lighter color in Ontario, Canada, northern Michigan, Minnesota, and Wisconsin than in the states directly south of the

Great Lakes. However, the honey of Tennessee we consider of very good quality; but according to the rule it should not be quite as bright as that of Ontario, Canada. If this rule applies at all it would affect sweet clover as well as alfalfa. It is well known that northern alfalfa is lighter in color than southern alfalfa in the irrigated regions. In fact, along the southern tier of states next to Mexico the alfalfa is on the amber order, while along further north it is what we call a light or white honey. It is possible that sweet clover is affected the same way, especially since it is a near relative.—Ed.]

English authorities are still baffled in their search for the cause of the Isle of Wight disease. Sufficient evidence has not been found to convict *Nosema apis* as the culprit, and the latest pronouncement is that, " altho probably an infectious disease, it is one which requires the coincidence of other and presently unknown external factors (besides a specific organism) before the disease develops. The disease is not necessarily conveyed by mere contact with contaminated hives or combs, or by feeding on contaminated stores."—*British Bee Journal,* p. 169. [Dr. E. F. Phillips, of the Bureau of Entomology, has practically come to the same conclusion with regard to a disease in this country that is somewhat similar, and which may be the same thing, but which among our Italians, and in our climate, is by no means as serious as it is in Great Britain.—Ed.]

Crediting to each colony the number of sections taken from it is easy, but not so easy to credit extracted honey. Weigh in a separate lot the extracting-combs taken from each colony, then weigh the empty combs after extracting, and you have a sure thing of it. But that's a lot of trouble, and hardly to be thought of. If you weigh an average comb that is filled and sealed, both before and after extracting, you will have a fair idea of the weight of honey a filled comb should contain. Weigh several and take the average. Then with a little practice you should be able to estimate and put in your book before leaving the hive the amount taken from each colony. Do you know any better way?

" After white clover has been yielding for a week or ten days. . . the queen should be confined to the lower story. In this lower brood-chamber eight combs are selected . . . that contain the most eggs or the youngest brood," p. 519. Why? If the object be to prevent swarming by giving the queen full swing, as in the Demaree plan, then the nearer we come to having no brood the better. And if all the brood in the comb will hatch out in a day or two, then we have much the same as empty comb. If all the cells are filled with eggs, then the queen will have nowhere to lay for the next 18 days. So I have always favored the ripest brood, if any, in the lower story. Yet Mr. Horner may have some reason for his procedure.

Just when you think you know something for sure, some one knocks it all over. I said " every laying queen ends her career by being superseded by the bees." I thought I had said something pretty good. Along comes that man Chadwick, p. 547, suggesting that there's no supersedure when they die in winter. I wonder if that statement might be tinkered up after this fashion: " Every laying queen, provided her colony continues, ends up by being superseded." Now, P. C., do your worst.

" If a virgin or a queen-cell is given, the chances are nine to one that when the queen goes out to mate the bees will swarm out with her," p. 517. I'm not going to dispute that; I don't know. But I'd like to know. Instead of it being the rule, I had supposed it the exception for bees to accompany the queen on her wedding-trip. But the bees going with the queen doesn't matter, if they only return. The really important question is this: In what proportion of cases do the bees go out with the queen and *stay out* with her?

" He thinks the odor left on the tree by one swarm attracts another, and that the swarm odor in the yard excites bees from other colonies to swarm," says " Mary," p. 441. Likely enough he's right about the odor on the tree attracting a swarm; but isn't it more likely that the noise rather than the odor of a swarm excites swarming in other colonies?

J. Ford Sempers stops the desire to swarm by giving a spoonful of honey one to three times. If I had known that 40 years ago, it would have been worth a thousand dollars to me—if it would work. But I'm just a bit afraid that if any one else tries it, it will prove a dead failure.

" During the autumn of 1916, Mr. Stewart's 500 colonies were fed about two tons of honey," p. 528. That seems to show that so good a beekeeper as Charles E. Stewart thinks he can better afford to feed honey than sugar.

Prof. Baldwin, many thanks for saying you were not successful in clipping a queen that was in full chase running over the comb, p. 546. I didn't want to think that I was the only one that couldn't do the trick.

SIFTINGS

J. E. Crane

ONE of the interesting things about reading Gleanings is the knowledge we acquire of different parts of our broad country, until we come to know the climate and conditions north and south, east and west, almost as well as in the little corner we occupy.

* * *

On page 521, July, J. M. Buchanan speaks of lespedeza, or Japan clover. Will he tell us more about it? Is it hardy north of his state? And does it yield honey freely?

* * *

I like Prof. E. G. Baldwin's courage in not giving up, page 546, July. Many a poor season, or what appeared to be, has been turned into a good one by the pluck and grit of the beekeeper.

* * *

Some beekeepers appear to reason like a farmer some one was telling me about a few days ago. He said, "What is the use of raising a new pig every year when you can keep the old one until it is several years old?"

* * *

I confess to some disappointment as to the outlook for a good-sized crop of honey in this country this year, as I read over reports from different sections. One thing is certain: If the crop is light, prices must rule high; but I am not yet ready to give up.

* * *

"We have not done it," is the heading of the last chapter in the mating experiment of bees under glass. We can enter into the feelings of those conducting it, for we regarded it as belonging to every beekeeper, and we had fondly hoped it might prove a success.

* * *

It was a disappointment to us to learn that the fiber package does not stand shipment as was hoped. Would labeling "Glass, handle with care," be misbranding? There are those who claim it would not—that the word "glass" stands for fragile goods—a class that requires very careful handling.

* * *

On page 275 is a paragraph describing a honey-board we use, which Mr. Baldwin calls a "kink for keeping bottoms of sections clean." Not at all for keeping the bottoms of sections clean, but for the more important work of keeping the faces of the combs clean. It keeps the bees from carrying up bits of dirty wax from the brood-chamber, and mixing with the white wax of the new combs.

* * *

The announcement that there may be disease among the bees is, to many persons, like a clap of thunder out of a clear sky. "I never heard of it. I don't believe it. It is all a notion," is the reply I received from one where I went to inspect the last colony.

* * *

Dr. Miller inquires, page 532, July, "If eggs are carried on the bees, why not on Italians just as much as on blacks?" Doubtless they would be if there were as many to carry. But Italians keep the worms so well cleaned out that but few mature into moths to lay eggs to be carried into the hive by the bees.

* * *

That July cover picture showing the clover is just grand. Of all our northern clovers I believe alsike the most beautiful. I am inclined to think that, acre for acre, it yields the most honey, and I am quite sure it is the most fragrant. Its fragrance reminds us of "the smell of a field that the Lord hath blessed."

* * *

Bees appear to have bred up well here as in other parts of the country in spite of the cold cloudy April and May, and well we may put June in too, altho not so bad as the earlier months. I saw the white-clover blossoms first June 18 and now July 3, but little clover honey has been stored. Two years ago very little clover honey had been stored at this time, yet it turned out a good season.

* * *

Dr. Miller discusses the relative amount of comb and extracted honey a colony will produce—page 273. One difficulty is, we are apt to forget the amount left in hives that have been run for extracted honey. So far as our experience goes, colonies run for extracted honey are usually found much lighter in autumn than those run for comb honey. If the amount of winter stores were the same I believe the difference in amount of surplus from colonies run for extracted or comb honey would not be as great as generally believed.

OUR FOOD PAGE

Stancy Puerden

DO you know, when I read of the never ending and futile arguments, debates, and speeches of the Senate I am filled with such feelings of indignation that I would never dare try to put them into words? Language adequate to the situation would inevitably send Our Food Page straight to the metaphorical woodshed and the company of M. A. O. Apparently it is quite all right for women to sacrifice everything that makes life worth living for this war. It does not matter that there are thousands of mothers whose hearts are breaking with fear and dread of what the war has in store for their boys—young wives whose husbands have gone, girls who have bidden their sweethearts goodbye, for how long? perhaps forever. But it would never do to deprive the drinking man of his beer. He is accustomed to it as part of his daily diet. So are we housekeepers accustomed to serve wheat in some form three times a day to our families, but we are obediently substituting at least three wheatless meals a week in the interests of food conservation. We are also learning to use less meat and do without many other things to which we have long been accustomed, and we make these small sacrifices gladly. But we think it only fair for the beer-drinkers to give up their beer and thus release 70,505,488 bushels of valuable grains (the brewers' own figures) for food purposes. And, as Dr. Wiley points out, "It would not be a sacrifice at all, but a blessing, and not even in disguise."

Isn't it a pity that those senators who, for weeks, have blocked the efforts of our president to have the food-control bill passed, and were willing to have the manufacture of beer continued, could not be set to making war gardens, running windmills, or some other useful work? Also I should love to set those misguided suffragists, who have been annoying our overburdened president and hurting the cause of equal suffrage by picketing the White House, to work in a kitchen, canning fruits and vegetables. Such energy and endurance should not be wasted.

A DRY SUBJECT.

How are your war gardens getting along? Have you canned any of your surplus vegetables or fruit yet? This month I am going to devote a part of my space to a dry talk. You may think I have done so in two senses of the word already, but now I mean a food-drying talk. The Department of Agriculture is urging housekeepers to dry a part of the surplus instead of canning it. There are several good reasons for this. In the first place, it is going to be difficult to get enough cans, either glass or tin, before the season is over; dried foods are fully equal to canned foods in nutriment; many people consider them equal or even superior in flavor; they require less time to prepare; they take up less storage space, and they can be stored in receptacles which would not answer for canned foods.

For years dried corn has been a favorite dish in the Puerden family. The children say I never cook enough of it at a time to satisfy them. Start the drying process by going to the garden after the corn yourself. It must be just right for the table—young, sweet, and tender. Never dry corn that is a little old or that has been gathered long. We think there is no sweet corn worth planting in our garden but Golden Bantam. Boil or steam it on the cob eight to ten minutes to set the milk. Drain and cut the corn from the cob, using a sharp and flexible knife, cutting only half way down to the cob. Scrape out the rest of the grain, being careful not to include any of the chaff. My fourteen-year-old son accuses me of inconsistency. He says I advocate more bulk or cellulose in the diet, and yet I object to eating corn cob. Spread the prepared corn in shallow layers on trays, and dry in any preferred way. I have had delicious dried corn by drying it in the sun, but this method is somewhat slow, the product is rather dark, and the weather is not always favorable. I have tested an evaporator consisting of a shallow tin tray above a deeper one containing boiling water. This seemed to cook the corn rather than dry it, and much of it was wasted by sticking to the tin. I now use shallow tin trays in my gas-oven, running only one burner turned very low and with the oven door open. The corn should be stirred occasionally to make it dry evenly. I also contrive to dry corn in the warming oven during baking. If you have any left after serving green corn on the cob, cut it off and put it into the warming oven and it will soon be ready to add to your store. When corn is dry, but not hard, condition it by storing it in boxes and pouring it from one box to another once a day for three or four days before putting it away in your storeroom.

To prepare dried corn for the table, soak it over night in a very little water; put it on to cook in the same water; bring it to a boil and simmer gently three quarters of an hour, or until tender. The water should be nearly absorbed when done. Do not drain off any of the water or you will waste half of the delicious flavor and much of the food value. When done add a little cream, or butter and milk, and season with salt and a very little pepper. If you have followed all these directions your dried corn will be so sweet that you can hardly convince visitors you have not sweetened it.

Driers consisting of fine-mesh galvanized wire cloth arranged one above another in a framework of lath can be cheaply made at home, and used hung above the kitchen range. The electric fan may also be used for drying some things, if one has the current. I should expect to find corn all over the room if I aimed an electric fan at it. Driers may be used on radiators, and this is the easiest method of all if the weather happens to be cold enough to necessitate heat, which sometimes happens early in the fall. String beans may be dried in much the same way as corn. Prepare them as for cooking and spread out to dry, or they may be blanched — that is, plunged into boiling water from six to ten minutes, and then dried, after removing the surface moisture between towels. Peas may be shelled and dried, or dried after blanching three to five minutes. Lima beans, if ripe, are shelled and dried very easily. If desired green, shell and blanch five to ten minutes and then dry. It is well to heat beans thoroly before storing, to kill all insect eggs. Green peppers may be dried after splitting and removing seeds, or they may be steamed until tender and then dried.

Onions, leeks, cabbage, cauliflower, and all root vegetables have been successfully dried, but there could be no object in drying these for home use if one has a reasonably cool storage place, as most country people have. Pumpkins and squash may be peeled, cut into one-fourth-inch strips and dried, or they may be cut thicker, blanched three minutes, and then dried.

Our grandmothers used to dry pumpkin by cooking it and straining it, just as you would prepare it for a pie, and then spreading it in thin layers in trays and drying it until tough and leathery. This was cut into strips and packed away in jars, and I know a man who thinks that pies made from pumpkin dried in this way were better than any modern pies, altho he is not the sort of man who is forever praising his mother's cooking to his wife. This is one trouble with this method. The pumpkin strips will not keep well, not if the children have access to the store room.

Apples, pears, and quinces should be peeled, cored, and sliced. Dip the slices into a weak salt solution, 8 teaspoons of salt to the gallon of water, to prevent discoloration, and then dry until tough and leathery, not hard. You may dry peaches either peeled or unpeeled. They should be cut in halves and the stones removed. Berries, plums, cherries, and apricots may also be dried. Do not forget to condition all dried foods in the way I described for corn.

In storing your product it is well to have it in rather small containers. Then if insects should get a start they will not be so apt to spoil a large amount. A cool dry storage place is desirable; and if you have enough glass or tin containers your food will be safer. Defective fruit-jars do nicely, and most housekeepers have a supply of empty coffee, baking-powder, or cocoa cans as well as empty lard-pails.

HONEY CINNAMON ROLLS.

About 3 cups bread dough, measured after rising once; 1-3 cup butter or oleomargarine; ¾ cup extracted honey: Cinnamon to taste.

Roll out the dough very thin, about ⅜ inch. Spread it first with butter or oleomargarine and then generously with honey, and sprinkle with cinnamon. Roll up in a long roll, cut across in pieces 1½ inches thick with a sharp knife, and stand on the cut ends in a well-oiled baking-pan, allowing plenty of room to rise. Scrape up all the honey which has oozed out on your kneading-board in the process of cutting and spread over the rolls. Allow them to rise until double in bulk, and bake in a moderate oven, watching carefully to prevent scorching. When you try this recipe and get honey all over your hands, knife, and bread-board you will undoubtedly decide you do not like Stancy Puerden at all; but when your family sample the finished product you may reverse your decision. These rolls keep moist much longer than those made with sugar. I once hid some so successfully from my family that I forgot them myself for a couple of days, and they were moist and fresh-tasting.

To vary the above recipe and make it richer, sprinkle nut meats over the dough before rolling it, or dot it with English currants. Also instead of bread dough you may use baking-powder biscuit dough. In the latter case, make it rather plain and dry, as the honey softens it.

Beekeeping as a Side Line

Grace Allen

"BEEKEEPING is a man's business," page 519. And it was the editor that said it! Oh, well! we don't mind, we women — even if it is. We like it just as well, may be a little better.

I am forever talking about the value of reading, and am glad Prof. Baldwin called attention, page 538, to what Dr. Phillips expresses so forcibly, "To be a good beekeeper one must read and re-read the books and journals pertaining to the subject." A few months ago we bound several years' files of GLEANINGS with nails, as described on page 37, January 1, 1915. Of course the bound volume is not elegant in appearance, nor does it lie open flat; but even this crude binding does make reference much easier than when the copies are loose, and it doesn't cost anything at all. Subscribe and read, and then bind and re-read.

One thing I have always rejoiced in is the fact that the bee journals do not make a practice of painting beekeeping in rosier hues than the facts will justify. In this they have seemed to me particularly conscientious and fair. They do not as a class suggest that anybody can get rich with a few colonies of bees in a back lot. Neither the uncertainties involved nor the work and study required are minimized by the journals devoted to apiculture. But occasionally some other publication, perhaps with the best intentions and as a result of ignorance or misinformation, will quite utterly misrepresent conditions.

I recall that our own first interest in bees hatched out of an article in a poultry journal, the idea of the article being that beekeeping was a particularly fine side line to go along with poultry-raising as all you had to do was to put a hive or two out in the yard, and the bees would do the rest. That idea had a particularly winning appeal. So we became beekeepers. We continued as beekeepers, not because there is no work involved, but because there is—fascinating, challenging, alluring work, with its own healthy chance of reasonable profits.

The most recent example that has come under my observation of exaggeration that amounts to misrepresentation seems particularly regrettable, because it is in an advertisement of one of the Department of Agriculture bulletins. Needless to say, the Department has nothing to do with it. A daily paper, fired with the ambition to serve the public in these days of unwonted activity, when every one is doing his bit and learning as many new bits as he can, has advertised different bulletins of practical value on gardening and foods and canning, and now on bees. And in these advertisements of the bee bulletin occur these sentences: "There are tons of potential honey in every vacant lot, suburb, and pasture." "A vacant lot overgrown with weeds has a hundred pounds of food in it." "The bee is the only domestic animal which you can keep almost anywhere, and which requires no feeding. All he asks of his keeper is patience and understanding of his ways." "I ask," says the bee, "neither food nor clothing, and only a box for a shelter."

Yet the bulletin itself says: "It is a mistake to paint only the bright side of the picture and leave it to the new beekeeper to discover that there is another side. Where any financial profit is derived, beekeeping requires hard work, and work at just the right time, otherwise the surplus of honey may be diminished or lost. Few lines of work require more study to insure success. In years where the available nectar is limited, surplus honey is secured only by judicious manipulations, and it is only thru considerable experience and often by expensive reverses that the beekeeper is able to manipulate properly to save his crop. Any one can produce honey in seasons of plenty, but these do not come every year in most locations, and it takes a good beekeeper to make the most of poor years. When, even with the best of manipulation, the crop is a failure thru lack of nectar, the bees must be fed to keep them from starvation."

Of course the bulletin goes on to condemn box hives: "The keeping of bees in boxes, hollow logs, or straw 'skeps' is not profitable, is often a menace to progressive beekeepers, and should be strongly condemned. Bees in box hives (plain boxes with no frames, and with combs built at the will of the bees) are too often seen in all parts of the country. The owners may obtain from them a few pounds of inferior honey a year, and carelessly continue in the antiquated practice. In some cases this type of beekeeping does little harm to others; but where diseases of the brood are present the box hive is a serious menace and should be abolished."

The bulletin itself, if procured and read, will thus correct the wrong impressions left by the advertisement; but any one who merely reads the advertisement without sending for the bulletin may happen to buy some bees, firm in the belief that they need only a box for a shelter, and set them out in his yard to gather part of the tons of honey in some adjoining weed-covered vacant lots. Thus he will lay himself liable to keen disappointment, and probably will pass soon into the ranks of slovenly, disastrous beekeepers.

As to bees being a good side line for a poultryman, so they are, even as chickens are a good side line for beekeepers, and either one or the two together justifiable side lines for anybody. However, there is no question but bees make a more ideal side line than chickens for a woman, or for a business man. The chickens require care every day in the year. No matter what the weather, the poultryman must go out into it to look after his flock. When he goes on a vacation, some arrangement must be made for their care. With a farmer, of course, they are no drawback, as he has other live stock that requires daily care, and so the chickens add no particular complications in this way.

With bees, the case is entirely different—no paddling around in the rain, no braving of winter storms; and, given the proper care before being left, they will look after themselves during vacation-time.

Now, side lines are undeniably of real value in people's lives. "All work and no play" has been weighed in the balance and found wanting, long years ago. But there is play and play. To many people, play for its own sake offers little satisfaction, and those are usually the ones who adopt some avocation or side line to bring the needed relaxation and refreshment. And while sometimes the conditions of a person's life may unfortunately forbid the exercise of his tastes in his real work, everybody can, within reasonable limits, choose his own avocation. So for thousands of people it represents the very thing that would have been, under happier or at least different conditions, his main work. With others, it is chosen to make a complete contrast to the chief business of life. And always it yields many hours of utter delight and satisfaction.

Take the case of Dr. F. C. Freeman, of Chattanooga, Tennessee. Starting two years ago with two colonies, he increased them that season to five, tho the three new ones were still rather weak by fall. "The orthodox thing to do," he writes, "was to double them up; but not being very orthodox, either in religion, politics, or medicine, why should I be in apiculture?" So he thought things out for himself, gave the hives pretty good protection, fed a little during warm spells thru the winter, for they were short of stores, stimulated a bit in the early spring, and the weak colonies came out of the winter stronger than they went in. Last year he increased further to nine, and again wintered successfully—this time without protection. So now he says he feels like a "sophomore in apiculture, just oozing with advice."

Dr. Freeman's immediate surroundings consist of extensive railroad yards, a baseball park, and forty-three acres of playground, all of which, he cheerfully admits, "are as good for flowers as the cinder heap of a near-by furnace. But I cannot believe that any one will go into beekeeping just for the money or even for the honey alone. I began to play with bees, not so much for profit as for a pleasant diversion, which they have certainly proved to be."

Moreover, Dr. Freeman has made part of his hives for the sheer delight of it. As he prefers the Danzenbaker hive, he is utilizing some white-pine boxes he has discovered, with 7/8 ends and 5/8 sides, each of them as wide as the depth of a Danzenbaker body. The top and bottom of this most convenient box being of matched material, he makes them into telescope covers and finishes with asphalt roofing. Because of the sides of his home-made hives being thin, he uses a division-board on each side. Corners are rabbeted and nailed both ways, and the result is everything solid and tight and satisfactory.

He has also put a "reducer" in his light current, and imbeds the wires in his foundation by electricity. But he adds, "Don't try to make your own hives unless you have suitable tools and are skilled and happy in their use." Right good advice this is, too. But he loves it himself, having used and enjoyed tools since childhood, so the making of the hives is just another bit of pleasure in his beekeeping. He sums up by saying, "Tho I am in a poor place to make money, and so far have had little honey, I should be very loath to be without the interesting little fellows in the back yard, and I know there are thousands who would gain profit, knowledge, and diversion if they would become back-lot buzzers."

* * *

STUTTERED STORIES.

(With apologies to Dr. Miller.)

There once was a woman (not me!)
Whose stories were crooked as Z.
Told early, told late,
No tale was told straight—
She stuttered her stories, you see.

BEGINNERS' LESSONS

H. H. Root

LESSON No. 7—EXTRACTING.

THERE is no time in the beekeeper's year so interesting and so exhilarating as when the swiftly revolving extractor throws the multitude of tiny streams of golden honey from the heavy combs. It is the realization of the beekeeper's ambition—the culmination of his fondest hopes.

A word of caution is necessary, for the beginner in his eagerness may decide that the honey is thick enough before it is sealed over, and that all the hard work on the part of the bees in capping the honey, and on his own part in uncapping it afterward, may just as well be saved by extracting the combs before they are sealed over. This is a serious mistake, for the bees themselves are the best judges of the ripeness of the honey; and since they do not seal it over until it has reached the proper consistency it is far safer to let them decide, and adopt the rule of never extracting a comb that is not at least three-fourths capped over on both sides. If the honey is so nearly sealed, it is safe to assume that the bees in the next few hours will cap the rest. Perhaps the majority of the combs may be entirely sealed over; but the beginner and professional beekeeper alike can not do better than resolve never to extract a comb that is not at least three-fourths sealed on both sides.

Some beekeepers work from hand to mouth, that is, they have not more than two supers of extracting combs per colony; and as soon as one super is nearly sealed over they extract those combs in order to give more room. This plan, while it requires a less expensive equipment of supers and surplus extracting-combs, requires more careful watching and rather more time during the honey-flow. Others go even so far as to pick out two or three full combs from a super, extract them, and then put them back again. If one has plenty of time at his disposal there is, perhaps, no objection to this; but it can not be recommended as good practice for one who wants to make the most out of his business with the least expenditure of labor.

The other plan, to which there is no possible objection except the added first cost of the equipment, is that of leaving the honey on the hives, tiering up super after super, and then extracting the whole crop at one time. Of course, where two honey-flows are close together the extracting should be done at the close of the first flow, so that the two crops, if of different flavor and color, may not be mixed. If the beginner is looking to the future and desires to plan, he positively must not yield to the temptation to get all the honey possible the first year. Instead of extracting one or two combs in a super when they are full, it is much better to allow the bees to build new combs from full sheets of wired foundation. This is one of the very best forms of preparedness and a bit of business foresight that the beginner especially can not afford to overlook.

UNCAPPING THE HONEY.

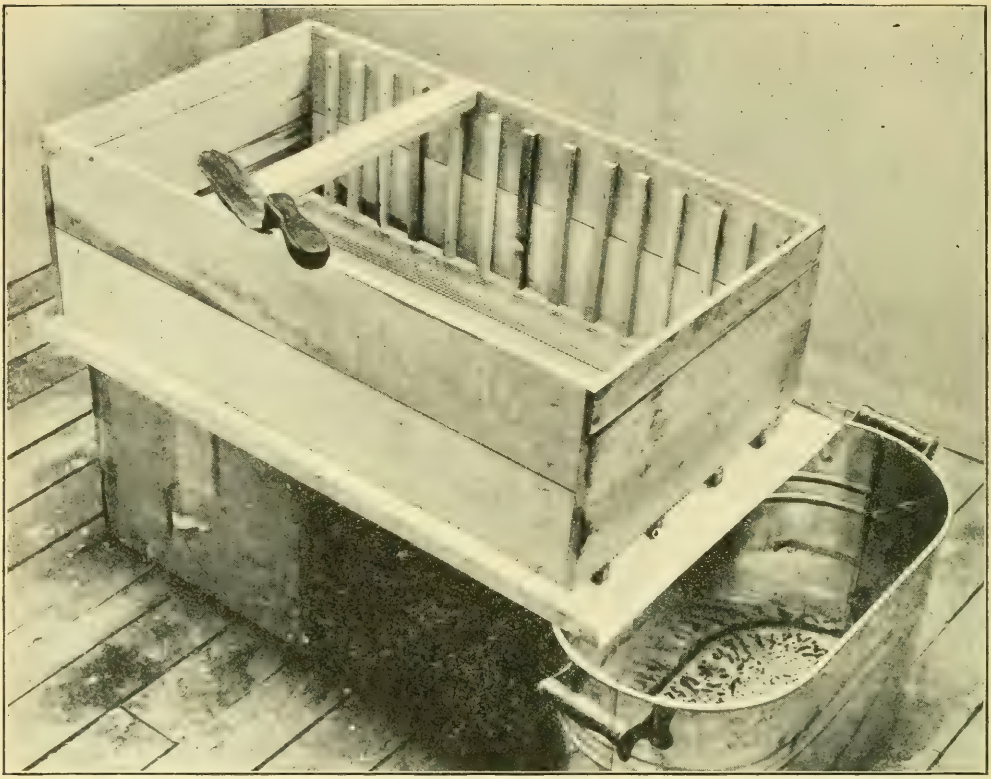
Assuming that the combs have been freed from bees by either of the plans given in Lesson No. 6, the first work after a suitable outfit has been prepared is to uncap the combs. The uncapping-barrel, which was a favorite form of capping-receptacle of the late W. Z. Hutchinson, is a practical, inexpensive outfit. This is pictured on page 542 of the July number. Cracker-barrels, especially those without heads, are cheap and they answer the purpose very well. When one barrel is full of cappings, packed down as tightly as possible, it may be moved over another tub to drain still further, and an empty barrel put in its place.

A somewhat more convenient arrangement, and one not very much more expensive, is the uncapping-box, shown in the illustration accompanying this lesson. This box ought to be about 19 inches wide, so that the uncapped combs can be placed cornerwise in one end before they are extracted. In this way no extra paraphernalia is needed to take care of the honey dripping from these uncapped combs. The box may be any convenient length. A cross-piece with a nail-point in the middle on which to rest the combs furnishes a good support.

The bottom of the box is covered with heavy screen and supported from the galvanized iron tray by ½-inch cleats nailed on lengthwise. If preferred a larger number of cleats can be nailed on, not over ¼ inch apart, and the screen dispensed with.

In uncapping, it is always best to have the bottom-bar of the frame nearest the right hand, for the bottom-bar is narrower than the top-bar, and the uncapping is, therefore, easier. When one side is uncapped, the comb should be reversed, therefore, end for end, instead of being merely whirled around on the nail-point.

There is a knack in uncapping rapidly, and this "knack" cannot be described nor photographed. It is acquired only thru the



Plain box for capping-receptacle with a screened bottom resting on galvanized tray. The uncapped combs are set in the lower end until they are put into the extractor. Thoroly stirring and punching the cappings hastens drainage.

school of experience. It helps to have the knife hot, and, therefore, a pail of water practically at boiling point is a help. A steam-knife is far better; but unless the beginner has at least 50 colonies it would hardly pay to invest in a steam-knife, boiler, etc.

IN THE EXTRACTOR.

When putting combs into the extractor care should be taken to select two that weigh about the same, otherwise the reel will be unbalanced and will do an immense amount of shaking about. If the combs are new and fragile, that is, if no brood has ever been reared in the cells to strengthen them by means of the fibrous cocoons, the handle of the extractor must be turned slowly at first until the bulk of the honey is out of the first side, then the pockets swung around and the handle turned slowly again for a few revolutions. Then the reel may be speeded up and all the honey extracted from the second side. Finally the pockets must be reversed to the first side again and the rest of the honey extracted there. In this way the fragile combs may be extracted without breakage. Tough old brood-combs do not require such careful handling, hence the advantage of using them for brood by the plan given in Lesson No. 6.

No honey should be drawn from the gate at the bottom of the extractor until there is enough to reach within two or three inches of the bottom of the reel, then a pail should should be set underneath and the gate swung wide open. The pail will fill in a very few seconds; and during this time the hand should never be taken from the handle of the gate. Running honey over on the floor just once will forever cure any one of the habit of taking the hand off the extractor-gate. By waiting until there is quite a depth of honey in the bottom of the extractor, the pail fills quickly, and practically no time is lost. Walking over a floor sticky with honey is not pleasant, and trying to clean it up without hot water is worse still.

The pail of honey should be poured into the strainer-can, and, as mentioned in Lesson No. 6, no honey should be drawn from this strainer-can until it is full. In this way bits of cappings and foreign material will float to the surface so that there will be no danger of the cheese-cloth bag clogging up. The honey should be drawn off into cans no faster than it is poured into the strainer.

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

This has been the first season in my beekeeping experience that I have not had a fertile-worker colony. The secret is, a young queen in every hive.

* * *

The best insurance you can have on your bees is a clean, fireproof yard. Several yards have already been burned this season because they were not properly cleaned.

* * *

The interior foothill region seems to have had the advantage this year in that the fogs did not always reach so far from the coast, thus giving more time for the bees to work.

* * *

Be cautious about taking too much honey this summer. It is a big temptation, I know; but next season is just as uncertain as this, and may require even more honey to carry the bees to safety.

* * *

Foggy days are nerve-straining days for the beekeeper in this region; but there is the satisfaction of not having hot desert winds while the fogs are hanging around. That gives a little consolation, even if it isn't much.

* * *

A bad day during an excessive honey-flow is not always a loss. It gives the bees a chance to clean up and make room for the queen. Every bad day after that is accomplished, however, is a total loss if the colony is in proper condition.

* * *

A new swarm in a heavy honey-flow will draw a full set of foundation almost as quickly as it will fill empty combs, and there is the additional value of the queen having a chance to lay before so many of the cells are filled with honey.

* * *

I have always preached "plenty of stores." This season has fully exemplified my sermons. There was one time this spring when another week of bad weather would have caused a loss of bees that would have been a disaster. As it was, some of the very best colonies were starved for lack of honey because the enormous amount of brood had consumed more than the beekeepers thought possible.

* * *

Last autumn I had a ton and a half of surplus honey on my hives, and debated as to whether I should extract it or not. Conditions at my ranch were not the best for extracting, so I decided to leave it until spring. When the spring honey was coming in sufficient to make all colonies safe I had less than 300 pounds of my big surplus left. That means there was nearly a ton and a half more consumed than the amount I judged would leave them safe until new honey would take care of them.

* * *

THE SCALE COLONY'S RECORD.

The season of 1917 will long be remembered because of its extremes. The average temperature during the entire winter was below normal. This continued into the spring, tho there were sufficient warm days to induce the heaviest breeding that we have experienced for several years. I will give a little review of the work of my scale colony from April 19 to June 19, the changing of the scale being due entirely to bad weather. The numbers following indicate pounds; g. means gain, and l. loss. Apr. 21, g. 4½; Apr. 22, g. 2½; Apr. 23, g. 1½; Apr. 24, g. 5; Apr. 25, g. 6; Apr. 26, 27, 28, net loss of 4 pounds; Apr. 29, g. 6; Apr. 30, g. 1. May 1, g. 10; May 2, l. 3; May 3, g. 4; May 4, g. 7; May 5, g. 14; May 6, g. 13½; May 7, g. 3; May 8, 9, 10, the net loss was 7 pounds; May 11, g. 3; May 12, g. 10; May 13, g. 11; May 14, g. 7½. During the rest of the month the daily gain only equaled the loss. June 1 gave a gain of one pound, with the following four days showing a gain of 2 pounds daily, while the 6th showed 4 gain. June 7, g. 6; June 8, g. 4. From the 8th until the 13th the gain was about 4 pounds daily; then the great heat wave stopped the flow suddenly, and the beam remained balanced. Today, July 4, the scale is at the very point where it was on June 15. It may be figured from this that we had only five perfect honey-gathering days in the month of May, and this at a time when the daily gain would have netted not less than ten pounds. Ten more perfect honey-gathering days in May would have doubled the honey crop in the orange district.

* * *

THE TERRIBLE HEAT WAVE.

Another disaster has befallen us—not a freeze this time, but an unprecedented heat wave following an exceptionally cool spring. On the 13th of June the temperature began to go higher and higher each day until by the 17th it had reached the phenomenal height of 119 degrees in the shade by government-station records. The air was like a furnace, and the damage done can hardly be estimated. The lemon crop is largely on the ground; late oranges that were not picked were injured badly, while the next year's naval crop is practically an entire loss from the fact that the young oranges have nearly all dropped off. And the beekeeper did not escape. The damage by melting down has proved to be greater than at first thought possible. The number of colonies melted down will amount well into the thousands, some apiaries having lost over a hundred colonies, while few escaped without the loss of at least a few colonies. New swarms were the greatest sufferers, many having literally melted down and run out of the hives, wax and all. One party reports a loss of 90 per cent in one yard, including old and new colonies.

Fortunately I did not lose a single colony, and only one comb. This I attribute to the fact that my hives are all well painted, and white, together with the fact that I use a lid with a rim that leaves a dead-air space of 2 inches above the frames. I have never had a colony melt down under one of these lids. This lid is known as the Chadwick lid; but to my uncle, J. K. Williamson, should be given the credit of origin. Under no circumstance would I abandon it for any other lid on the market. It is a colony-saver, without a doubt.

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

"ANY honey-dew yet?" That was a sort of universal greeting at the little county meeting July 7th. "Not yet, but lookin' for it 'most any time," was the usual answer. Such a slim little crop as was in the hives seemed to justify leaving it there as long as there was the slightest chance of more, yet the honey-dew scare hung over us all. It has its uses, honey-dew honey, but we don't want it mixed with our nice white clover.

* * *

Beekeepers are not easily cast down—fortunately. Admitting less than half a crop this season when of all seasons we most wanted that elusive bumper crop, the regular quarterly gathering-together of Davidson Countians was particularly pleasant. The glaring sun kept us moving, to stay within the shade of the persimmon tree; but in spite of heat and glare and the genuine disappointment as to the honey crop, friendly good cheer ruled the day, while we munched apples and "swapped" ideas. Mr. J. M. Buchanan, of Franklin, was a welcome guest who discussed the market condition in general and reported conditions in Williamson County as no less disheartening than in Davidson.

The main talk of the afternoon was by E. J. Adkisson, Nashville, on "Transferring." This is an important subject in Tennessee, where, unfortunately, there are so many bees in box hives, and it was ably handled by Mr. Adkisson. Often beekeepers have an opportunity to buy bees cheap out in the country districts, but they have to take them in boxes or gums or any sort of makeshift. Then skillful transferring becomes very important.

The comical feature of the occasion was the sudden entrance of an immense and ponderous truck that snorted right into the yard and directly thru the rapidly scattering little convention! It was loaded with all sorts of merchandise to be delivered in the neighborhood, including some iron rails that stuck out several feet behind its own great length, and went knocking and bumping against things on all sides, whenever the truck turned a bit. And it was bringing us a belated shipment of pound bottles to contain the honey we had just admitted we did not have. I suppose we shall somehow find room to stack them alongside the unused new supers and five-pound packets. We were prepared this season, all right, but to no avail.

* * *

On page 546, Prof. Baldwin quotes Mr. F. M. Perry as saying that "the best and surest way is to clip the queens right on the combs, not touching them with your hand." Some one, I believe it was Mr. Byer, once suggested that method for me to try, claiming it as his favorite. I have tried it, or at least I have tried to try it. I have failed so far, probably because I am so afraid it won't be the wing that will get clipped. It looks too risky for me. Picking up the queen and then performing the operation in the hand seems easier for me to learn.

I once had a queer clipping experience:

I had picked up the queen with my right hand and transferred her to the left. I glanced away a second to pick up the scissors, and when I looked back the little queen had collapsed, utterly wilted, right there where I held her by the feet between the end of my thumb and the tip of my first finger. In amazement, I laid her on the broad end of the hive-tool, where she lay completely crumpled up, shriveled, and motionless. I was overwhelmed with regret and astonishment. I could not understand how I had killed her, yet there she lay. I waited and watched several minutes, finally remarking to the world in general, "Well, there's no use sitting here watching over a dead queen." Because of a little whimsical foolishness that swept over me as I was about to toss the body away, I slid it off instead on the top-bar of one of the frames, and bade the bees mourn for their dead. And, behold, the dead came to life. As quickly and mysteriously as she had crumpled and wilted, she now stirred and straightened out, the abdomen came back to normal size, and with her bees around her she soon crawled down between the frames. I was afraid she was permanently injured, but she continued to do a brisk business, apparently none the worse for the experience. I still don't understand it. I suppose I must have hurt her in some way, tho I would do all but swear on the witness-stand that I touched nothing but wings and feet. It was several days before I ventured to clip her, but that time she came thru all right. [Your queen had what is called queen "cramps"—a condition that is probably due to fright.—Ed.]

* * *

MORE PREPAREDNESS.

Reverting again to Mr. Crane's wise dictum that "the best time to study wintering is in the spring," I want to refer briefly to that cooling subject, in spite of this being neither spring nor winter. When people are not quite sure what their policy will be, or should be, they are but too prone to loiter along in that undecided state, doing nothing, till it is too late to do anything anyway. If we are going to pack our hives this fall, we ought to do it in October or early November, and I want to take up this subject, the Editor willing, somewhat thoroly in the next two numbers of Gleanings. So to set the ball rolling, let me put it this way.

The Department at Washington, as I see it, seems to have two particularly important lines to work along, thru the extension workers in the South: First, the education and enlightenment of the utterly uneducated and unenlightened, of which, because of our remote and mountainous districts, we have more than our share; and then the general improvement of methods among those always most eager to improve, that is, the reading, progressive beekeepers. And among this latter class the federal workers seem to feel that the biggest step toward greater success will come with the adoption of winter packing. And by our most intelligent consideration of their suggestions, and the experimental adoption of them whenever possible, we want to help them to help us to improve ourselves.

But here is how it looks to some of us. Our winter losses are reported as something quite scandalous. But by far the most of this loss is in the yards of that large untrained contingent that uses box hives and old gums and cracker-box equipment, and of course does everything in connection with the bees in a slipshod fashion. Among the other class, the winter losses are not heavy—at least they have not been during the last few years. Last winter was a "corker"—low temperatures, high winds, sudden changes, wide variations, and at those times winter cases sounded very convincing. Yet among the beekeepers around Nashville, the beekeepers who belong to the Association and come to conventions and read Gleanings, there was almost no loss at all. Yard after yard of from twenty to fifty unpacked colonies lost not a single colony, or perhaps one from queenlessness or one or two from shortness of stores, these entirely understandable accidents that will occur occasionally in the best of apiaries. The larger beekeepers had very slight losses—five out of 180 in one case, as an example. Then the bees built up quickly and strong thru the late cold spring, and it really does seem to us, looking at it quite impartially and with the most earnest desire to do the best thing (who can possibly care so much as we?), as tho well-built hives, strong colonies, vigorous young queens, plenty of stores, and contracted entrances are about all we need. Some put on packed supers, some wrap hives in paper, but that is about as far as the most successful have gone, up to this time.

On the other hand, Mr. Bartholomew, basing his statements on the thoro, scientific work in Washington, assures me we would be amazed at the worth-while-ness of the extra labor and expense.

I have a most interesting letter from Mr. L. E. Webb, of Morganton, North Carolina, along these very lines. He is naturally very deeply interested in this wintering problem—so much so that he plans to experiment with the winter cases; yet he does feel as tho his own wintering has been almost all he can desire. He has never had any winter losses, and his colonies come thru strong and vigorous in the spring.

I should like to hear from others in this Dixie land on this most vital subject. May we not have, as Mr. Webb suggests, a sort of symposium of intelligent views? Tell us what you have done toward protection in past years, and with what result; and what you plan to do this winter, and why and how.

* * *

These July days are hot out in the beeyard, white linen being almost the only endurable dress. And I choose white or tan hose and shoes over black.

* * *

Way down south in Dixie, oh it's gettin' mighty dry,
Sun gets hot and hotter as it creeps across the sky;
Clover heads turn brown and browner—dry almost as dust—
And I reckon Dixie bees will quit, and give up in disgust.
May be, tho, they won't stay quit; some merry summer day
A certain "sweet secretion" will too likely drop this way.
Honey-dew (alluring name!) will tempt our downcast bees,
And then—will M. A. O. ship down some quoted language, please?

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

EVERY season has some peculiarities; but 1917 so far seems to be out of the ordinary as it has consisted entirely of "peculiarities" so far. A very cold and long-continued winter caused would-be weather prophets to predict an early warm spring. As we all know now, the spring was very backward, and late and cold. Then we were told that summer would be earlier and warmer than usual—result, June was the coldest on record. And so it has continued, and clover is the latest in bloom that many of us have ever experienced. The first nectar to amount to anything from this source came in on July 5. The ground is saturated with moisture; and clover, altho backward earlier on, is now rank in growth, and heavy rains are falling as I write, July 7. With heat following, it is hard to understand how clover can fail to yield nectar; but then we may not get the heat if previous months of this peculiar season is a sample to judge from.

However, *prospects* at this date for a crop from clover and buckwheat are good, if, as already intimated, we get warm weather—something that we generally get in July in this part of the country.

* * *

In connection with the sale of honey this season, that I refer to in another paragraph, never before have we received so many orders in advance for honey, provided we have a crop. It is a common thing to get orders from individuals for 100 or 150 pounds of honey; and in almost every case they will stipulate that they are willing to pay whatever is the ruling price when honey was ready. Honey got a great boost last season because of its excellent quality, and it is to be hoped that any harvested this year will not disappoint consumers that are sure to look for a high standard of quality. Little has been said as to quality having a great deal to do with possible prices; but no one will deny that it is one of the prime factors in deciding the question.

* * *

While clover is late this year, a big acreage of buckwheat has been sown at the usual time. While we are always glad to see fields of buckwheat, this year we are filled with mixed emotions when we see buckwheat up two inches or more at a time when clover is just starting to yield. Judging by other seasons, we may expect buckwheat to be in bloom at the time clover should be yielding its best.

* * *

It is possible to have colonies too strong at the opening of the clover flow—page 511, June issue. Possibly; but who would not take all chances in that line rather than have them *too weak?* At our north yard the bees build up much faster than they do here in York Co., for some reason; and the strongest colonies, if left alone, will break up at the opening of the flow from clover if not earlier. It is common for us to have three full-depth brood-bodies occupied by the queen quite early in the season; and the only way to hold them back is practically to strip them of brood at the opening of clover. With an immense force of bees at that time, a crop is sure to be gathered if there is any nectar going. At the opening of the flow the queens are confined to an eight-frame L. body; and the queens soon occupy that amount of room, which means a good colony for later work in season. While we like to see these big rousing colonies, yet if left alone they will break up by swarming; and more than once we have had colonies just ready for the clover flow, when it opened, store more honey than some of these so very strong earlier in season.

* * *

In the June issue of GLEANINGS the editor speaks of the backward spring weather, and comments on the fact that, for all that, the bees have bred up very fast. Same here with some qualifications. Such a condition was noticed till along about fruit bloom, when for some reason or other we had a rapid loss of field bees. The result is that, altho the season is so very late, yet many of our colonies strong earlier in the season are not in prime shape for the clover flow—not that they are actually weak, as hives are full of brood in all stages, and have many bees as well. But a great proportion of these bees are *babies*, and are not ready for field work. Feeding for three weeks preceding clover would no doubt have helped a lot to avoid the present condition; but with a lot of bees and steady cool weather, not to mention the outlay for sugar, we did not feel like taking any chances, and simply made sure that all colonies had stores enough to carry them thru.

* * *

WHAT SHALL I ASK FOR MY CROP?

As to honey prices, the editors of this journal invite us to say what we have been offered, and what we think we *should be offered;* also any other thing in connection with this problem that might be suggestive for the general good of the fraternity. Personally I have already given my ideas in a vague way as to the situation; but, frankly, I am not sure as to what we should ask provided we get a crop. Everything else is high—no doubt of that; but as to whether we are justified in trying to sell honey at a price proportionate to prices asked for some other food products—that is another question. There is a possibility — nay, a probability—that some honey will be sold too low, as firms have already offered (and no doubt have bought) some honey at a price we would nearly all say is too low by all odds. On the other hand, there is a tendency on the part of some—at least we see it that way—to try to boost the price too high, thus killing the demand. After all, our old-time friends, *supply and demand,* will be the greatest factor in determining prices. One large producer writes me that he has sold his crop (yet to be produced) whether large or small, at 13 cts. f. o. b. shipping-point. He did not say what package it was to be put up in. Another large producer has been offered 12 cts. in gross-weight pails—fives and tens, and has refused the offer. That is about all we know to date as to sales for this year's crop.

IN TEXAS

F. B. Paddock, State Entomologist

THE bee situation over the state at this time is very interesting, even if it is not promising. Generally speaking, conditions over the greater portion of the honey-producing area are as bad as have ever been known to exist. Reports indicate that conditions vary within the usual well-defined sections. In the extreme southwest locality conditions are fair. There is plenty of flow for the bees to rear brood, but not enough for a surplus. If a rain occurs, there may be a good fall flow. Conditions are worse in the northern localities of this section, until at the upper edge the bees are only 45 per cent normal. The bees are without stores, and in some cases starving. Here there are no prospects for a honey-flow of any kind. Thruout the Southwest the condition of the bees is about 40 per cent normal with but little prospect of a honey-flow. In the western section the bees are almost normal, with prospects for a fair yield of honey in the alfalfa region. In the south-central section the bees are about 50 per cent normal with no present honey-flow, and with prospects for only a short cotton flow later. Conditions are about normal in the north-central section with prospects of a late cotton flow. In the eastern section the bees are practically normal, and with reasonable rain a good surplus will be gathered. In the northeastern section the condition of the bees is normal and the prospects of a honey surplus from horsemint and cotton are good.

It is only natural to suppose that from such conditions the honey market is very erratic. Except for one locality no honey has been offered for sale thruout the entire south section. In this exception extracted honey brought 15 cents a pound on the local market, for a small offering. Thruout the Southwest but very little honey has been offered and some has sold for 10½ to 12½ in two 60-lb. cases f. o. b. A little honey has been sold in the western section at the same price. Thruout the remainder of the state no honey has been offered for sale; but it is yet early for honey to be put on the market in the northern sections.

* * *

We regret that we are forced to say that the bee-moth is still causing considerable loss to the beekeepers of the state. Many small beekeepers do not know what this pest is or how to detect its presence. There are still a greater number of large beekeepers who consider the bee-moth a necessary evil. There is a chance to overcome ignorance, but it is a much more difficult matter to counteract indifference. Why some beekeepers are willing to allow the bee-moth to cost them $10 to $50 a year is hard to understand. A tax of from 2 to 10 per cent in a direct way would cause much action. The presence of the bee-moth is the result of indifferent methods of beekeeping.

* * *

Some time ago mention was made of a move in two counties to put on demonstrations of transferring bees from box hives to movable-frame hives. In each county (McLennan and Anderson) there is a large proportion of box-hive beekeepers. Arrangements were made by the County Apiary Inspector and the County Agricultural Agent to hold these demonstrations in a box-hive locality. Reports from the demonstrations held thus far indicate that the results are more gratifying than had been expected. The time of the inspector in every case was free, but they feel well repaid for their efforts. Such encouraging results from the first efforts of such an important work will stimulate those already started to greater effort, and should prove to be an example for many other counties in the state wherein is located a county apiary inspector and a county agricultural agent.

* * *

Of late much complaint is being heard, from both the shipper and buyer, of the inability to get pound packages of bees to reach their destination in first-class condition. There has been a very great trade developed this year in this state for bees by the pound. When the investigation disclosed the fact that some ten of the largest beekeepers had in past years shipped successfully to all points in the United States and Canada it was felt that the additional demand of this year would be met satisfactorily. Since no two shippers use exactly the same methods it is impossible to give a single reason for the failure. In some cases it is evident that insufficient water was supplied. In other instances the bees got mussed from the feed provided for them. There is a feeling among several of the shippers that the bees have been smothered by improper care at the hands of the express companies. Of course for some time now it has been very hot, and the pound-package trade has lasted longer than usual, so it may be that heat is largely responsible for the heavy losses. At any rate, improved methods must be devised; for the pound package of bees is a trade that has come to stay, and will certainly develop as the efficiency of shipping is increased.

AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado

THE season is two to three weeks late; but since June 15 the weather has warmed up so that all vegetation has well nigh caught up. Sweet clover is not more than one week late in blooming, and alfalfa has been yielding honey very well from the first crop. The price of hay has been so high that we were expecting alfalfa to be cut very early; but the farmers seem to be short-handed, and the alfalfa is standing, with the result that bees are getting a chance at the blossoms.

A little surplus honey will be secured from the first crop of alfalfa, but not much. The bees are swarming, and that causes some trouble; but most districts should end up the season with their normal number of colonies. Sweet clover is not so plentiful as last year, but we shall doubtless have some honey from it. Horsemint has yielded some honey, and would have done excellently had we been favored with a few copious rains the latter part of June. Our crop will be far more satisfactory if we can have one or two inches of rain before July 15.

HONEY PRICES.

Concerning prices, there are none on comb honey. Beekeepers seem to think comb honey will advance in proportion as has extracted, but I hardly think so. If we can secure ten or twenty per cent more than last year we shall be fortunate.

The retail grocer does not want to pay over $3.75 a case for comb honey delivered at his store. Perhaps we shall be able to boost this somewhat, but we have a job ahead of us.

Extracted honey is being sold at almost all prices. The writer has sold quite a few 60-lb. cans at $9.00 per can f. o. b. Boulder. Pint jars of honey are selling at $3.60 per dozen, but sales are very limited. Sales will doubtless pick up when dealers realize that honey has advanced sharply in price.

I think that Colorado alfalfa extracted honey should bring 13 to 15 cents. A car has been contracted at 11 cents, and an offer of another one at 12 cents has not been accepted by buyer at this date.

The consumers will pay 30 cts. for a 1-lb. jar of honey, and they will pay $9.00 for a 60-lb. can, so there need be no fear at the present time that the price will materially decrease. The price will undoubtedly go down while the producers are selling; then when the buyers have their supplies the price will again advance.

ON THE BOTTLING QUESTION.

Some bottlers maintain that they cannot pay 15 cents for extracted and get out on the proposition with any profit. If this is true we may see the bulk of our crop go into the consumer's hands direct from the producer, for the producer can sell to the consumer in 60-lb. cans almost as cheaply as he can sell to the bottler. If the bottler can put up a fifteen-ounce jar to retail at 35 cts. it ought to be possible to pay the producer 15 cents a pound for the honey.

This is the way I figure it out for the bottler, and I believe my figures will not be far off for the bottlers of the country when everything is averaged up.

I figure a 15-oz. net jar will retail at 35 cts., and that the retail grocer will pay $6.25 a case of 24 jars. The retailer will make 9 per cent per jar profit. The wholesaler will want his full 10 per cent commission. Here it is in figures:

COST OF BOTTLING ONE 60-LB. CAN OF HONEY.

One 60 lb. can of honey at 15 cts.	$ 9.00
63 glass jars (in cases) holding 15 oz. each	2.52
Labels, labor, liquefying, etc.	.30
Shipping, billing, charging, and collecting, including discount	.50
Freight, delivering to wholesaler	.40
Commission or discount to wholesaler	1.64
Bottler's cost of 60-lb. can bottled	$14.36
The bottler sells this thru the wholsaler to the retailer for	$16.38
Bottler sells the can and case (empty)	.40
	$16.78
Bottler's cost	14.36
Bottler's profit	$ 2.42

The consumer pays 35 cts. per jar, or $22.05 for one 60-lb. can of honey put up in 15-ounce jars. If he bought it direct from the producer he could get it for not exceeding $10.00.

SMELTER SMOKE OR DISEASE.

Sacbrood has been very prevalent in Colorado this spring, some colonies very nearly dying from the malady. A few producers have transferred their colonies the same as tho foul brood were present. Most cases of the disease, however, have gradually disappeared.

What we are pleased to call smelter-smoke poisoning almost ruined one of the writer's apiaries nearly thirty miles north of Denver. Fortunately there were but 35 colonies in the apiary, but they were reduced from very strong colonies to small handfuls of bees in a very few days. One colony was completely destroyed. This trouble appears during a rainy spell, and does not affect queenless colonies.

We have many theories as to its cause. It may be smelter smoke and it may be city smoke, and it may not be smoke at all. But this trouble is most severe within thirty miles of Denver. The most destructive area is in the Platte River Valley twenty miles down from Denver. A large smelter is near the river in the valley at Denver, and the theory is that the smoke floats down this valley (as it does) and carries the poisonous fumes, the rainy seasons driving the poison from the air to the surface of the ground, and thus poisoning the vegetation and especially the pollen. Beekeepers about Denver have learned pretty well where this trouble strikes most frequently, but there is not a year passes but that some one has bees destroyed. This trouble may explain some losses as far as fifty miles from Denver.

COMBLESS PACKAGES FAILED.

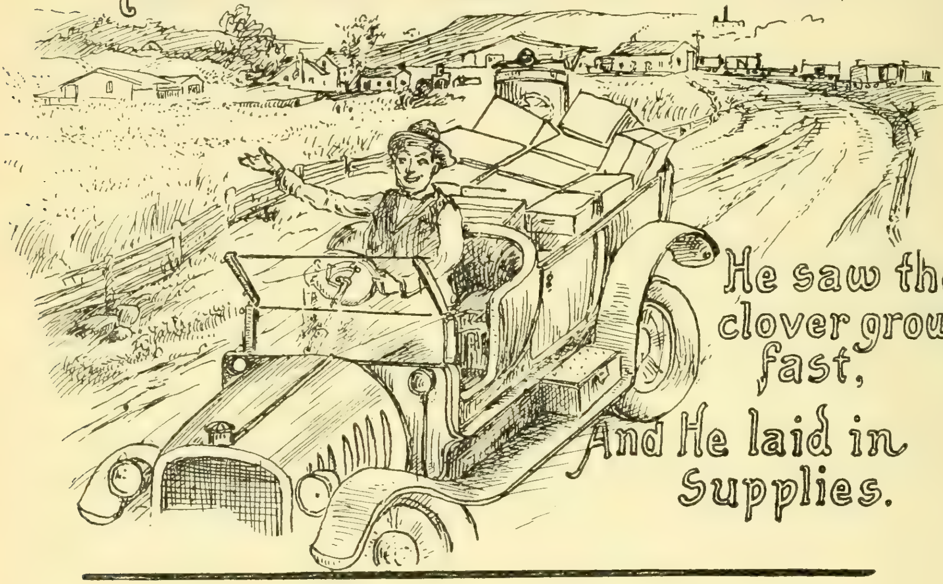
The package-bee business is growing each year; but the effort made this spring to increase production thru means of packages of bees was not very satisfactory. Too many beekeepers attempted to fill orders who had no experience in preparing the packages for shipment. The writer had very discouraging results in attempting to secure 300 two-pound packages. But sixty were delivered, and none were less than ten days late. Two hundred packages were shipped, the other hundred ordered having to be cancelled on account of losses and lateness in shipment. Both buyer and seller lost several hundred dollars by the deal. Production was not increased and much valuable time was lost.

Packages should be ordered very early in the spring so that the shipper can easily have everything in readiness. Liquid feed caused all of our troubles. If candy had been given, the bees would doubtless have gone thru satisfactorily.

Mother Bee NURSERY RHYMES

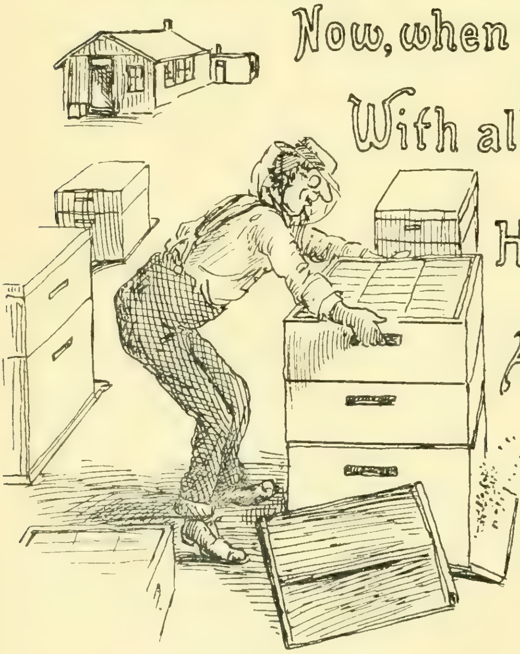
By M.G.P. (Mother Goose Plagiarized.)

There was a man in our town,
And He was wondrous wise,



He saw the clover growing fast,
And He laid in Supplies.

Now, when He saw the clover bloom,
With all his might and main,
He put the empty supers on
And they were filled with gain



GLEANED BY ASKING

E. R. Root

J. H. S., New York. — My neighbor with a cornfield adjoining my beeyard complains that my bees sting his horses when he runs a cultivator thru the field near the apiary. He says I must move my bees away. Can he compel me to do so by law? I cannot move these bees a quarter of a mile, and so what shall I do?

A. The probabilities are that your neighbor could compel you to move your bees provided he could prove that they sting his horses and sting him to the extent that it endangers either the life of man or of beast. Yes, you had better move your bees; but do not attempt to move them only a fourth of a mile, but move them at least five miles away. In the spring of the year or in the fall you can move bees a short distance without great loss. To move them only a quarter of a mile with a honey-flow on would only result in making conditions infinitely worse, as the flying bees would come back to the old stands and be crosser than hornets.

D. L. H., Ohio.—Are artificial cells as good as supersedure or swarming cells?

A. Artificial cells may be built under the management of a skillful queen-breeder that are equal to if not better than the swarming or supersedure cells. One who knows his job can produce conditions artificially that will furnish some beautiful large cells. These artificial conditions might be said to be a combination of the swarming and supersedure impulses. Good cells cannot be raised unless the colony is made strong and highly prosperous by a little feeding every day if honey is not coming in from natural sources.

A. E. F., Michigan.—There is a swamp about five miles from my place. I have no fall flora at the home yard. Would it pay me to move my bees to the swamp?

A. That depends. The whole swamp country should be carefully examined to see if there are any honey-bearing plants. If aster, goldenrod, or swamp milkweed grows in the vicinity it would pay to move the bees provided there are no other bees in the swamp, and it might pay anyway. Practically all swamps, no matter where located, yield some fall flora useful to bees. During the present year, when syrup and sugar are so high, it will pay to practice migratory beekeeping if it ever did.

But be sure to move the bees on a cool day or at night. Unless the hives are well ventilated, moving colonies on a hot day is usually attended with considerable loss.

W. L. H., Ohio.—1. Will it pay to extract the honey and feed up on cheap grape sugar?

2. Can brown sugar be used in place of granulated sugar?

A. 1. No, decidedly not. Grape sugar does not make a good winter food, but it does excellently for the purpose of stimulating brood-rearing. Years ago we fed grape sugar as a winter food; but we will not do it again, as practically every colony so fed died. It is a very poor sweet in the first place, and, what is more, it cakes in the combs.

2. The price of brown sugar is so near that of granulated that it would not pay. Moreover, brown sugar does not begin to go as far, apparently, as the white; nor do bees winter on it so well.

W. S. F., Iowa.—When granulated sugar is 8 cents, and extracted honey 12 cents, will it pay to extract the combs clean and feed sugar for winter?

A. We are inclined to think it would; but when sugar is 6 cents and honey 7, it does not pay. The ratio of difference must be great enough to warrant not only the cost of taking the honey away from the hive and putting sugar syrup in the combs, but there should be an allowance of at least 25 per cent extra to cover loss from the feeder to the sealed cells. When sugar syrup is fed to bees it stirs up the colony to rush to the fields when perhaps there is nothing there. This causes a loss in vital force of bee life. There is also a considerable shrinkage between the amount of sugar syrup fed and the amount actually capped over in the combs. Unless honey, pound for pound, brings anywhere from 25 per cent to 33 per per cent more than sugar it will not pay to extract and feed sugar syrup. There is one more consideration, namely, some of our best beekeepers now believe that, pound for pound, sealed honey will go much further than sugar syrup, because honey is a natural food containing other food elements needful in brood-rearing. How much more honey is worth than sugar syrup no estimate has been given.

M. A. B., Indiana.—I have a nice queen, but she has a deep dent in her body. Does it do any harm?

A. If she is doing good work, apparently no harm has been done more than to disfigure her looks a little. Some of the best queens we ever used had a little dent in the abdomen. Others were minus a leg on one side; and while they appeared to go over the combs with a little more difficulty than normal queens, they laid as well as any queens in the yard. We would naturally expect such queens to be superseded a little sooner, however.

L. F. C., Michigan.—What do you do when two or three swarms come out together and unite in one big cluster?

A. Divide them about equally with a dipper and place them in two or three separate hives. Such united swarms work together very nicely, altho they may be in three separate hives. If one bunch of bees gets a part or all of the queens no particular harm is done except that all but one queen will be sacrificed. Unless one has a virgin or a laying queen to supply the others, they will be queenless. Usually at such times there will be plenty of cells or virgins available to give to each swarm.

K. L. F., Pennsylvania.—Which has the finer flavor—comb or extracted honey, both from the same source and from the same hive?

A. The difference is not great, but slightly in favor of the honey in the comb. During the process of extracting, a very slight amount of the delicate aroma of the honey is lost. The flavor of honey is said to reside in a minute quantity of ethyl alcohol. When honey is exposed to the air, or broken into fine particles as it is during the process of extracting, a very minute portion of this flavor is carried off; but the average consumer will scarcely notice the difference. There are some consumers, however, who say they like comb better than extracted. Whether this preference is due to the desire to chew something, or to an actual difference, we do not know. Under normal conditions comb honey will command a higher price than extracted; but during this year of 1917 it is a question whether extracted will not come pretty near the price of comb at retail. But conditions now are abnormal.

C. L. W., Missouri.—Is there any difference between supersedure cells and swarming cells?

A. The impulse is different, altho one set of cells looks about the same as the other. Supersedure cells can be distinguished, however, from swarming cells usually by the season. The swarming cells will appear during the swarming season only, while the supersedure may show up at any time of the year when bees are raising brood. If the queen is furnishing a small amount of brood, and queen-cells are found in the hive, it may be concluded the bees are about to supersede her, and will, therefore, raise supersedure cells. Of course, it is possible to have cells raised under both impulses—swarming and supersedure. If the queen is beginning to fail at the beginning of the honey-flow, supersedure cells would be started. They would doubtless be hastened on by the swarming impulse.

A. J. C., Kentucky.—I have 100 very strong colonies, most of them two story, and I desire to move them to fall pasture. The weather has been very warm. How would you do it?

A. Nail wire screens over the entrances. Put an empty story on top of each of the two-story colonies. Secure them in place with some crate staples. Two at diagonally opposite corners may be enough, but four are safer. The bottom-boards should be secured in the same way. On top of the whole put a wire screen with full opening.

It is usually not safe to move a two-story colony in hot weather unless it is fully screened at top and bottom. The putting on of an empty story with screen will not make it necessary to screen the bottom. Bees should be moved either at night or on a cool rainy day. With good hard roads a rainy day is a good time to move bees, as they will all be in the hives before shutting them in.

It is our practice to choose such days in the spring when we are setting out our outyards. One must be prepared with rubber boots and a raincoat for loading and unloading the bees. Rain on top of the wire screens will do no harm. It is more beneficial than otherwise.

In loading bees on to a truck, self-propelled or horse-drawn, do not pile the hives one on top of the other unless 2x4's are placed between to provide ventilation between the tiers. If the bees have to go on a long drive, taking four or five hours in the hot sun, too much ventilation cannot be provided.

It may be advisable to carry along a can of water and wet down the screens every now and then.

We also advise moving bees with an automobile truck rather than using horses. While the horse-drawn vehicle is cheaper, it is so much slower that it pays to pay a higher price and put the bees thru to destination in a hurry. An automobile truck will do the work in one-fourth the time usually.

J. N., Indiana.—No honey coming in; bees are starving. Is it all right to feed brown sugar? and it is suitable for winter? I can buy granulated sugar that has become dirty. Would this be better than brown sugar? Is there any difference between beet and cane sugar for bees?

A. You can feed brown sugar; and in the absence of granulated sugar it would do very well, either for summer or winter. But granulated sugar is much superior as a winter food. We recommend the use of the dirty granulated sugar in preference to clean brown sugar.

It is claimed that cane is better than beet sugar for canning purposes. In Great Britain cane sugar is recommended in preference to beet for bees. We have used both in our feeding operations, or what we supposed was one and then the other, but have never been able to detect any difference. All granulated sugars we have ever tried have given excellent results.

W. C. B., Pennsylvania.—What is the most effective way of getting bee-glue off the fingers?

A. Alcohol or gasoline will remove it. Lava soap, which can be obtained almost anywhere, will remove a good portion of it. To remove it all, a little sand soap should be used in connection with it. A little bottle of gasoline if kept on the washstand will be found a great help. First use gasoline, and then soap and water.

L. C. F., New York.—What makes the bees so cross this year? I have never known them to sting as they have done this year.

A. We have received similar reports of a like condition all over the white-clover regions. Cold backward summer weather, now a little sunshine with a flow of honey, then rain or cold and no honey, makes a condition that is just right to make bees cross. A sudden stoppage of a flow of honey, either from the fields or from sources where the bees are robbing, will invariably make them cross. Bees are apt to be cross when buckwheat stops in the middle hours of the day; cross when the nectar has been washed out of the blossoms; cross on a cool or chilly day; cross when the basswood flow suddenly gives out; cross right after a rain when the nectar has been washed out of the blossoms; cross on a cool or chilly day following a day of warm sunshine when plenty of nectar was coming in. A cool atmosphere is apt to check the supply of nectar.

W. C. F., Michigan.—How much honey does it take to make a pound of wax?

A. Experiments show that it requires anywhere from 5 to 20 pounds of honey to make a pound of wax. The latter figure is altogether too high, and the first one is probably too low. Seven or eight pounds would be, perhaps, a fair average. The bees consume the honey; and when they eat lavishly the wax is secreted in the form of thin scales on the under side of the bee's body. It has not been definitely decided whether the secretion of these scales is involuntary or not; but whether voluntary or otherwise, they are doubtless used at the time of the year when they are secreted in comb-building.

G. C. C., Connecticut.—I find that some of my baby nuclei are robbing from each other. For instance, one nucleus will be brought to the verge of starvation, and the other one will have an abundance of stores so that there will hardly be room for the queen to lay. It does not seem to be exactly like robbing, but what it is I do not know.

A. In the A B C and X Y Z of Bee Culture you will see mention made of what is called "borrowing." It is in reality stealing. Sometimes the bees of one hive will go into another one without any resistance on the part of the other bees, fill up with stores, and carry it to their hives. There is no fighting, but just a sort of peaceful transfer of stores from one hive to the other. Sometimes some seasons this quiet way of robbing, stealing, or borrowing is very troublesome among a lot of baby nuclei; and it is not confined entirely to the very small clusters of bees.

J. L. P., Pennsylvania.—I have read somewhere that feeding extracted honey to fill out unfinished sections can be practiced to advantage. Would you advise me to feed back at the close of the season?

A. At the present price of extracted honey it probably would be more advantageous to extract the honey in sections, and hold the drawn-out combs till the following season. But if your market shows that comb honey will sell for about twice the price of extracted you will be warranted in feeding back to a certain extent. To do this work it should be taken up right after the main honey-flow. Use white honey the day it is extracted, thinned down, by adding about 25 per cent water by bulk. Very thick honey may need a little more.

Some colonies are much better in finishing sections than others and you will have to select those that do the best work. The brood-chamber must be contracted so that the queen will keep every comb filled with brood, as otherwise a great deal of fed-back honey will go into the brood-nest. The thinned-down honey should be given just before sundown to avoid too much uproar in the apiary. Not more than two supers of sections should be on a colony at a time. As soon as the top super is full it should be removed and a fresh super placed next to the brood-chamber.

It is always well to remember that fed-back honey always granulates quickly. It should, therefore, be sold where it will be consumed at once. It should never be sent to a distant market.

J. E. B., New York.—We do not hear so much about the smoke method of introducing now. Has it gone out of vogue?

A. Generally speaking, we recommend the cage method; but in the hands of an expert the smoke method has the advantage that queens are introduced at once; and in the case of virgins, three or four days old it is the only method that can be employed successfully at times. For particulars regarding this plan see "Introducing," in the A B C and X Y Z of Bee Culture.

L. H. W., Ohio.—This has been a year of excessive rains, chilly and backward weather, but white clover is very abundant. It has been in bloom since the last of June; and at this date, July 16, it looks as if it might last till autumn. I should like to know if white clover will continue to bloom as long as it continues to rain almost every day.

A. Yes and no. During a season like this one, white clover is cropped down by mowing or by feeding in a pasture. But usually clover does not yield much after the middle of July, altho it will probably do so this year, as the season is anywhere from a month to six weeks late.

M. B. L., Indiana.—Do ordinary honeybees get honey from red clover?

A. Red clover will yield more honey during a dry season than during a wet one. The reason for this is that the drouth stops the growth of the flower-tubes so that they are shorter. We remember distinctly one season our bees at the Harrington yard were getting considerable red-clover honey, while those at the north yard, also in the vicinity of red clover, were doing nothing. There had been some local showers at the north yard, but none at the Harrington yard. The result was that the growth of red clover was stunted at the Harrington yard. All Italian honey-bees will gather nectar from a second growth.

Some seasons red clover would be the most valuable honey-plant we have, provided we could lengthen the tongues of the bees or else shorten the flower-tubes. Not very much advance has been made either way, altho we have had bees with tongues at least a half longer than the average.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Knitting

BY GRACE ALLEN.

Knitting—I, whose awkward hands have never knit before,
Putting needles in and out and thread around and o'er—
But oh I think such blinding thoughts of battles overseas,
Knitting here where summer air is murmurous with bees.
Knitting with a soft white thread, but oh how can I say
What tragedy of crimson stain it soon must wipe away—
What bitter need of pads and wipes and bandages and socks—
Knitting here today beside my tall pink hollyhocks?
Knitting, knitting—all we women, thru this stern July—
Tell me, what is sending all our young men out to die.
Is it righteousness, and vision? (how the roses nod!)
Is it something deathless in our hearts that we call God?
If the roses could but answer! If the bees could only say!
But roses keep their silences and bees their ancient way.
Knitting, knitting—but, dear God, while men die overseas,
Have *I* a right to roses and pink hollyhocks and bees?

* * *

Questions on Three Plans for Comb-honey Production

Dr. Miller says, Sept. 15, 1915, p. 746, that the Fowls plan, July 15, 1915, p. 574, won't do for comb honey. Mr. Doolittle, Aug. 15, 1915, p. 661, gives a plan which seems to be about the same thing for comb honey. From the last four or five lines I judge the bees will start queen-cells after the hives are reversed.

1. Are these plans alike? If not, please explain the difference.

2. Will bees start queen-cells above an excluder with or without supers between?

3. What is the reason for the following statement which I have often read, but never understood; viz., that you cannot push back the second story a little and the third story forward to allow a current of air to pass thru all three, when running for comb honey?

4. When using the shaken-swarm plan without increase, for comb honey, would it be practical to hive on empty combs and extract if the bees stored in the brood-chamber, or would this require a good deal of looking-over of those shaken on to combs that way?

5. If I placed a hive of brood without bees over a colony, with a super of sections and an excluder between the two hives, and left the brood on top ten days, would the bees go up and start queen-cells?

6. Would they, as the brood hatched, carry the honey up there if the super had only foundation and six or seven ''drawn'' sections (''baits'')?

7. I am trying to develop a plan when I have 50 colonies or more to use some sections, but mostly shallow extracting-supers, for bulk comb honey and extract a little to fill up the pails with. Please advise me a good way to do it, with no increase. We have good early fruit bloom, crimson clover, and eight weeks of white clover. Last year one hive made 112 sections.

Lincoln City, Neb. C. A. Cotell.

Miss Fowls, to whom we submitted the above, replies:

Altho we have raised quite a little comb honey in the past, still at present we are engaged almost entirely in the production of extracted honey, and therefore do not consider ourselves authorities on the former subject.

1. From the little that Mr. Doolittle has given of his method, Aug. 15, 1915, p. 661, I should say that the two plans are decidedly unlike. Twenty days before the honey-flow he puts on a second ten-frame story of combs with queen-excluder intervening. At the beginning of the season he reverses the hives, putting a case of sections above the queen and excluder. Ten days later he shakes seven of the upper combs and sets the upper hive on the new stand.

Our plan is this: Whenever capped cells are found, they are torn out, leaving the uncapped ones; and the hive is replaced with one of foundation or empty combs, one of the central frames being exchanged for a frame holding the queen and a small patch of unsealed brood. Above this is placed the excluder and two full-depth or three shallow supers of empty combs, and, on top of all, the old hive of brood. Then at the end of seven or eight days the upper story is moved to a new location.

We understand Mr. Doolittle's plan is applied twenty days before the season opens quite regardless of the presence or absence of any swarming tendency, while ours is used only in case of capped cells. He has only one shallow super intervening between the hives of brood while we have at least three. In his lower story the brood-nest is not started at all, and he might also have quite a little honey there, to both of which conditions we would object. But, above all else, I would call attention to the fact that neither his old nor new swarm is in a natural condition. Our attempt has been to follow nature as closely as possible. For this reason we would strongly object to shaking bees from that upper story, as it would leave the old swarm so weakened that there might be danger of chilling the brood in case of a cool night, and it would also leave many young bees with the new swarm—a state that is quite unnatural, and which might very easily cause swarming.

Of course I realize that, if we were to raise comb honey, our plan would necessarily be changed. Just what changes we would need to make it is hard to say, as we have raised but little comb honey since adopting this method. Moreover, I have no intention of criticising Mr. Doolittle's plan, since it is one that we have never tried; but I do know that, if we were to alter our method for the purpose of raising comb honey, we would try to keep the old and new swarm in as nearly a normal condition as possible. And we certainly would not shake, as we have already tried that plan in a comb-honey apiary and discarded it long ago.

2. I suppose you mean if cells were already started in the brood-chamber. Well, I would answer this if I were not so much afraid of Dr. Miller.

3. This would be too cool an arrangement for comb-building at night. The heat rising from the swarm would escape thru these openings.

4. A good queen would occupy enough combs so that it would not be necessary to extract from the brood-chamber.

5. Probably. Especially if they already had the swarming fever.

6. Yes. They would naturally prefer the comb and also the warmer place for storing.

7. Whoever answers this last question satisfactorily ought to have a medal. However, any up-to-date comb-honey man could doubtless give some valuable hints on the subject; in fact, back volumes of the bee magazines have quite a little along this line; and also Dr. Miller has written this up very fully in his Fifty Years Among the Bees.

* * *

When an Old Hive is Better than a New One

In 1914, having just moved, I spent the first season in 35 years entirely without bees. The next June I started with bees again in a small way, and then decided to try catching some stray swarms. I put a hive up among the branches of a large maple-tree, but it showed no bees for so long that I was almost discouraged. Then one day, Aug. 15, as we were closing our noon meal, my wife remarked, "Your bees are swarming!" I said, "No, not mine, for I always remove queen-cells and put the new colony on the old stand and never have any after-swarm." We went out just in time to see the air black with bees, and a fine swarm alighting on the hive in the tree. They built up in good shape, and that fall we packed them for the winter between two much stronger colonies.

When we arrived from the South, May 1, I found this hive contained nice clean combs and plenty of honey but no bees. As the other hives were very close I decided that these bees had doubtless drifted into the larger swarms. These combs I changed to a new hive, thinking they would give a fine start for my first prime swarm. The old hive I saved for catching another stray one. On June 10 we caught another, shook them into a new hive, and again replaced the old hive in the tree.

Hive located in a tree to catch any stray swarm.

In this way the same hive is used repeatedly, and I much prefer the old hive to a new one, for the wax about an old hive attracts the bees much more readily.

Three Rivers, Mich. M. L. Brewer.

* * *

Overheated Brood and other Matters

Referring to the conditions mentioned by Ira J. Monroe under Heads of Grain, in Nov. 15th issue, I may say that I have experienced similar trouble. In the bright sunlight of a summer day I examined all my colonies, being careful, as I thought, not to expose them to injury from excessive heat. However, the next day the bees began bringing out nearly mature brood, and I saw many pale weak-looking bees, apparently just hatched. These were struggling feebly from the hive or else were being carried out half alive. This continued for a couple of days, and I also found dead brood in the cells. I diagnosed my trouble as overheating, altho I had frequently manipulated frames under identical conditions without any after-effects.

Last season I averaged only 50 pounds per colony. I produce extracted honey, but cut the comb from the frames into long strips, fitting four pieces into a pound jar and filling the remaining space with liquid honey. This I market locally under the label ''Pure Florida Chunk Honey.''

Miami, Fla. G. A. Ormerod.

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Alfalfa on Light Land Yields Well in a Dry Season In the editorial on page 171 for March the editor says that alfalfa in a dry season on light land will yield honey when in a wet season on heavy land it will fail to do so. I have had a grand opportunity to note this very thing the past two seasons here in the South Platte Valley, Colorado.

The season of 1915 was very wet, and the bees gathered but little nectar from alfalfa, 1916 was quite dry, and the bees worked well on the alfalfa on light and heavy soils alike. In 1915 the bees worked wonderfully on sweet clover. Thus it is next to impossible to have a total failure here—not one in fifteen years.

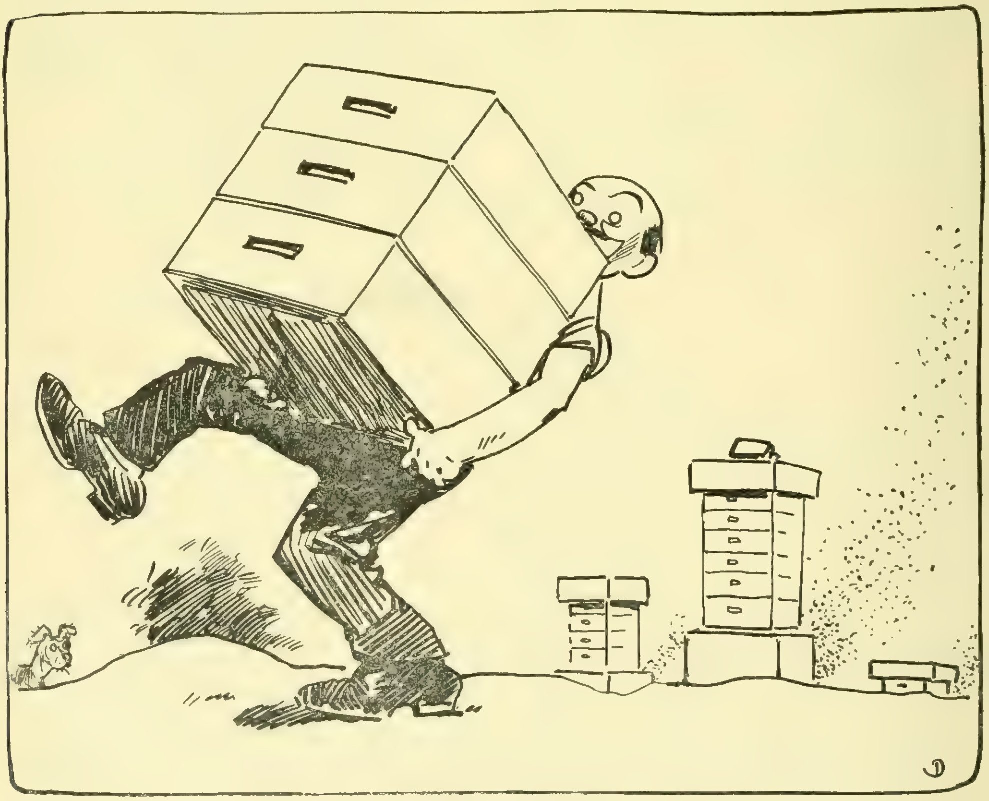
The 1916 crop had a much better body and flavor than the 1915 crop. My customers reminded me of this. C. E. Crofoot.

Crook, Colo.

* * *

Dandelion Honey During the last ten days of May, 1916, my six colonies stored 150 sections—in fact, so much that the queens were honey-bound. This must have been dandelion honey, as there were no other blossoms at the time and the odor around the hives was distinctly that of dandelion. The honey was golden in color, and the flavor and body were excellent. The flow seemed to be the result of a month of rain followed by warm clear weather. Contrary to the experience of Mr. Crane, page 359, May, this honey did not granulate, the last of it not being sold until ten months after it was gathered.

Palmyra, N. Y. G. H. Parker.



THE BACKLOT BUZZER

BY J. H. DONAHEY

Jerry Juniperberry says he ain't braggin' but up this way the travel is so congested on account of the heavy honey-flow that the bees had to put traffic cops on at the entrances.

JUST NEWS

Editors

THERE is more than the ordinary interest taken in the amount and quality of the present season's honey crop because of effect on prices. Knowing of this interest, we have endeavored to secure disinterested reports from all parts of the country. We have made special inquiry of our correspondents as to the following points: What is the amount of crop already harvested? what are the prospects of a crop yet to be harvested? what offers are producers receiving for comb and extracted honey? what were the sources of the honey crop already harvested? Below we print a condensed summary of the answers received from different parts of the country:

SOUTHERN CALIFORNIA.—Season a great disappointment, especially in the sage district where many apiaries did not produce a pound of surplus; in the orange belt, crops are much less than hoped for in mid-season. May had just five perfect honey-gathering days. In the orange region beekeepers were getting a flow of two to three pounds a day when the heat wave came as a blast from a furnace, the most burning heat of any experienced even by the oldest settlers. For a week the temperature ranged between 100 and 120; hundreds of colonies melted down with the heat, and few apiaries escaped the torrid wave. The loss will doubtless equal or exceed the winter loss. The navel-orange crop practically a total loss, and lemons very badly damaged. At this date (July 10) in the orange region bees are gathering just about what they use; no further honey flow in sight; prices, comb white, $4.00 to $4.50; light amber, $3.50 to $4.00; extra white, 13 to 15 cts. Two tons sold this week at 15 cts. to local trade in Los Angeles.

CENTRAL CALIFORNIA.—Conditions favorable in alfalfa localities; very little comb being produced compared with extracted; many have sold extracted at 10 cts., some holding for more; 10 cts. is the average price for fair alfalfa extracted—not water-white.

IDAHO.—Honey-flow now (July 15) on; prospects good, but heavy winter losses will limit the crop; possibly 30 days of honey flow in sight from alfalfa, sweet clover, and alsike clover; expected that extracted honey will bring from 9 to 15 cts. per pound; comb from 12 to 15 cts. per section. One very excellent authority from Idaho says that present indications are that about Caldwell the production per colony will be the best ever known, and that the honey is of better quality than for a number of seasons, adding that strong colonies will store almost double the surplus of that of an average season.

MICHIGAN.—No crop of honey yet harvested; if now (July 14) there comes a week or ten days of good weather there will be a fair crop; prospects uncertain, altho a good basswood honey-flow may be secured, and present estimate is half a crop. There are 10 days or two weeks of white clover in prospect providing there is favorable weather.

CONNECTICUT.—Clover appears to be a failure, no nectar in it; supers only half filled; possible fall crop from flowers and weed bloom.

ONTARIO.—No clover honey harvested at this date (July 14), and but little on the hives; 10 days ago prospects for a crop were never better; but on July 7 it started to rain, and for seven days in succession has kept it up. Clover is rank and will bloom until August 1, so weather conditions will determine future crop; prospects are good for basswood crop; no quotations on comb honey; large stores have offered 12 cts. in 5-lb. pails, gross weight, for extracted; some extracted has sold for 13 cts.

NEW YORK.—No crop yet harvested at this date, July 16; prospects now good providing the weather proves favorable; possibly two weeks of white clover in sight; no offers for the new honey crop yet reported.

LOUISIANA.—Extremely dry weather in many parts of the State has resulted in total failure of honey crop in June, the principal honey-flow month.

IOWA.—Honey-flow did not begin until early July, and no harvest yet (July 14); prospects of a honey crop excellent in western Iowa; about 50 days sweet-clover honey-flow in sight; producers not receiving any offers for either comb or extracted honey as yet.

WESTERN COLORADO.—No crop yet except two or three pounds of apple-blossom honey per colony; honey crop still in prospect only fair; no offers above 9½ cts. for extracted, and comb not likely to be over $3.50 per case; sweet clover and alfalfa bloom until frost, yielding slow but long, mostly during August.

WESTERN OREGON.—Supers filling rapidly at this date (July 13). Prospects were good; but owing to extremely dry weather clover is fast drying up; small prospects of future crop in sight except in Coast Range mountains fireweed; buyers offering $4.00 per case for comb honey; no offers, and no price made for extracted.

GEORGIA.—Gallberry flow proved to be the best in years, and tyty gave a substantial yield; probable yield per colony substantially larger than at any time in the last three seasons. Prices thus far in a wholesale way have been for extracted, in barrels, 6½ cts. a pound; for comb honey, 10½ cts; prospects from goldenrod still in sight.

TENNESSEE.—No crop yet harvested (July 14); in favored places the crop may average 50 pounds per colony, while in other places the estimate is not above 25 pounds. A good rain July 14 broke the long dry spell, but probably too late to save the clover, which is now practically gone; extracted will doubtless retail at 20 cts. in 5-lb. buckets.

ILLINOIS.—No surplus honey to date (July 14); prospect good for a fall crop of heartsease and other weeds; little comb honey produced in Illinois, and no offers for honey reported. For light-colored extracted, producers are getting 10 to 11 cts. wholesale in barrels.

MINNESOTA.—Owing to very cool and wet weather fully 30 days of clover bloom has been lost, and practically no surplus gathered at this date (July14); without more rain clover should last about 10 days longer; basswood prospects generally not good; large buyers are active, but no prices yet set.

NORTH CAROLINA.—Average yield per colony in central portions of State perhaps 35 pounds; no more surplus now in sight. Honey in this section is produced in a small way by many people, hence big buyers not present, but sales are reported at from 15 to 20 cts., according to quality, mostly bulk comb, to the consumer.

OHIO.—Almost no crop harvested at this date (July 20); however, weather conditions are improved and white clover is in excellent condition with prospects of from 10 days to 3 weeks of honey-gathering from that source. If weather conditions favor, crop may be nearly normal.

NEW JERSEY.—No crop yet harvested (July 12); prospects of 20 pounds per colony on the average in sight; no offers for honey reported.

KENTUCKY.—Crop good, eight or ten days of clover still in sight; jobbers are offering 12 cts. for extracted, 15 cts. comb.

PENNSYLVANIA.—No honey crop yet (July 20) harvested; white clover failed to yield, some colonies starving during clover bloom; some sumac coming in; prospects for buckwheat in central Pennsylvania good because of large acreage; no honey for sale, so no quotations.

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The eighth annual field meeting of the Connecticut Beekeepers' Association will be held at the Connecticut Agricultural College at Storrs, Conn., on August 9 and 10.

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The Panhandle Beekeepers' Association will hold its summer meeting on Aug. 22 at the apiary of A. J. Yahn, Triadelphia, W. Va. Some notable speakers are expected to be present.

* * *

At the next annual meeting of the Illinois State Beekeepers' Association, Nov. 14 and 15, at Springfield, gold and silver medals and cash prizes are to be awarded on exhibits of both comb and extracted honey. James A. Stone, Secretary, R. D. 4, Springfield, Ill., will furnish details.

* * *

The Superior Honey Co., Ogden, Utah, reported in early July that the prospects were then very good. The winter loss in that part of the country was heavy, but package bees to the number of about 2000 packages were received in Utah and Idaho to make good the winter losses.

* * *

The Texas State Beekeepers' Association will meet in conjunction with the Farmers' Congress as usual this summer on August 2 and 3 at the A. and M. College, College Station. Pres. E. Guy LeStourgeon will preside at the Association meeting. A meeting of exceptional profit is expected. A special invitation has been extended by the secretary of the Farmers' Congress that the beekeepers furnish an exhibit of bees and apiarian products. M. Faulkner, Waco, Texas, is secretary of the Farmers' Congress.

* * *

The annual meeting of the Eastern Massachusetts Society of Beekeepers, formerly the Massachusetts Society of Beekeepers, organized in March, 1916, was held in Boston on April 7. The officers chosen are as follows: Pres., S. Lothrop, Davenport, Instructor in Horticulture at the Independent Agricultural College, Hawthorne, Mass.; Sec., Mrs. Goodnough, 1702 Center St., West Roxbury; Directors, Mrs. Susan M. Howard, Wakefield; Mr. Benjamin P. Sands, Brookline, and Mr. Clarence Boylston, Milton. The annual field day will be held on Saturday, August 11, at the Independent Agricultural School at Hawthorne. The announced speakers are: the President, Allen Latham; Arthur C. Miller, O. F. Fuller, E. R. Root, Chas. Stewart (State Inspector of Apiaries, of Johnstown, N. Y.), Hon. Wilfred Wheeler (Secretary of the Massachusetts State Board of Agriculture), and F. A. Smith.

* * *

The New York State Association of Beekeepers' Societies will hold its summer meeting and picnic on August 3 at the apiary of S. D. House, Camillus, N. Y. The object of the summer meeting will be principally to get an idea of what the honey crop is and what the price of honey ought to be.

* * *

The Western New York Honey Producers' Association will hold its annual field meeting and basket picnic on Saturday, August 11, at the apiary of J. Roy Lincoln, on the Saunders Settlement, or Niagara Falls-Lockport Road just out of the city of Niagara Falls.

* * *

Mr. H. C. Klinger, secretary of the Pennsylvania State Beekeepers' Association, writes that more than 100 demonstration meetings for beekeepers have been held thruout the Keystone state under the supervision of the State Department of Agriculture. He adds that every part of Pennsylvania is being aroused to the possibilities in beekeeping.

* * *

The Tupelo Honey Producers' Association was organized on May 15 at Wewahitchka, Florida. This Association represents the tupelo honey-producers of both Georgia and Florida. J. J. Wilder, of Cordele, Ga., was elected president, and J. R. Hunter secretary-treasurer. A committee was appointed to consider a plan for the organization of packing plants and a selling exchange to handle the 1918 crop of tupelo honey. The 1917 crop had been practically sold as early as the middle of May. Those taking part in the organization of this new association represent about 15,000 colonies of bees.

* * *

The annual picnic of the Toronto Beekeepers' Association was held on Empire Day, May 24, in the apiary of the Ontario Agricultural College at Guelph, which is 50 miles from Toronto. The day proved to be cold and showery, and many were discouraged by the unfavorable prospects. However, about 45 people came, bringing their picnic baskets. There were speeches and a general good time socially. The subject in which greatest interest was taken was that of containers for the prospective honey crop. Paper and fiber containers were discussed and samples shown, but it was pointed out that, for shipping, the honey would need to be granulated, and the public would need to be educated to its use. That is the principal difficulty in the use of paper containers—the fact that the people do not buy granulated honey as readily as they do the liquid form.

* * *

The annual field meeting of the Chicago Northwestern Beekeepers' Association will be held on Tuesday, August 14, at the home apiary of the president of the association, Mr. E. S. Miller, at Valparaiso, Ind. Preparations for a good program (including a good dinner) are already made. The Miller apiary is located about a mile east from the railroad station of Valparaiso, but Mr. John C. Bull, secretary-treasurer of the association, will see that transportation is waiting all in-coming trains till noon. Valparaiso is located 44 miles southeast of Chicago on the Grand Trunk, the Nickelplate, and the Pennsylvania railroads. Call phone 571R for information concerning the meeting and transportation on arrival in Valparaiso. President E. S. Miller is the man who operates 400 colonies of bees in five yards, working an average of two days a week. He will show and explain his system of management.

* * *

Mr. Collin P. Campbell, president of the Michigan Beekeepers' Association, writes that the legislature of his state doubled the appropriation for foul-brood inspection and that the work is progressing very satisfactorily. He adds that Mr. Kindig has proved to be very energetic as an inspector and has two good assistants at work. Mr. Campbell believes that the next legislature, in view of the results that will be shown by increased inspection work, will give the beekeeping cause all the money that can be efficiently used.

* * *

A very successful field meet of the Northwest Missouri Beekeepers' Association was held on the morning of July 4 at the apiary of J. W. Romberger, located in a wooded pasture in the edge of St. Joseph, Mo. This association is a branch of the State Association, composed of 35 members. It is unique in that it meets the first Monday evening of each month instead of meeting only once a year, as is the case of most associations. One speaker each evening gives in detail his methods of handling some phase of beekeeping. The rest of the evening is given over to a general discussion of the subject and to a question-box. Monthly meetings enable the beekeepers to bring their perplexities before the association for discussion while they are still fresh. The meetings are held in the county courthouse at St. Joseph.

* * *

An all-day summer meeting of the Pennsylvania Beekeepers' Association will be held at the apiary of L. K. Hostetter, five miles northeast of Lancaster, Pa., on August 16. All persons interested in bees are cordially invited to attend this summer meeting.

* * *

An enthusiastic field meet was held at the apiary of Chas. P. Johannigmier, Granite City, Ill., on July 12. It was the first meeting of the kind ever held in that locality. A. L. Kildow, State Inspector of Apiaries, and Deputy Inspector Withrow were present.

* * *

Mr. C. L. Sands, of Madison County, N. C., has been appointed beekeeping specialist in the Entomology Division of the State Department of Agriculture of North Carolina. He works under the direction of State Entomologist Franklin Sherman.

* * *

The Pennsylvania State Beekeepers' Association meeting was held at Dr. Sterner's apiary, Wrightsville, on July 7, and was largely attended. Geo. H. Rea and the host were the principal speakers on the occasion.

* * *

The Ramsey County Beekeepers' Association was organized at a meeting held at the University Farm of Minnesota in early June. The officers hope to secure a membership of 1000 beekeepers.

* * *

The field day of the Ohio Beekeepers' Association will be held on Sept. 6 and 7 at Wilmington. An exceptionally interesting program is expected.

* * *

The field day of the Rhode Island Society of Beekeepers will be held at Rhode Island State College, Aug. 4. An excellent program has been prepared.

OUR HOMES

A. I. ROOT

Him only shalt thou serve.—MATT. 4:10.

Seek ye first the kingdom of God and his righteousness.—MATT. 6:33.

And every one that hath forsaken houses, or brethren, or sisters, or father, or mother, or wife, or children, or lands, for my sake, shall receive a hundredfold, and shall inherit everlasting life.—MATT. 19:29.

THERE has been a great scarcity of potatoes for seed in this region. Finally our town people here in Medina succeeded in getting a carload of "Rurals" from some place in Michigan, and it was my privilege to get a few of them. As they did not get here till toward the last of June, I was in a hurry to get them planted. Well, in this locality it not only rained almost every day, but sometimes "two times" in a day. The potatoes were nicely sprouted (by being spread out in the sun, while getting the ground ready), and I did not want to trust anybody else to cut them to one eye, and properly place them in the furrow without knocking the sprouts off.

By the way, between our place and that of our nearest neighbor there is a vacant space that has been allowed to grow up to grass clear out to the street. Mrs. Root has always objected to having farm crops put on this piece of ground. She declares green grass—at least a certain amount of it—is as ornamental about the home as expensive flowers—at least she thinks a nicely kept lawn should go with the flowers to set off their beauty. Well, for the first time, she has (yielding to the call of the President) said I might plant *potatoes* on that spot. So we turned under the heavy sod and got the ground nicely fitted and ready to plant. But it kept on raining—not very hard, but a sort of drizzle. The thermometer was close to 80, and it was just the time that the potatoes should be in the ground. I rigged myself up in some old clothes and was dropping my potatoes in spite of the rain. Pretty soon a young fellow came along doing some work on the wires for the electric company. He, too, was working out in the rain because, as I presumed, the work was urgent. It was somewhat of a question which one of us looked the more respectable, for he, too, was pretty well covered with mud from digging up poles that were to be moved elsewhere. Something was said about working out in the rain. Finally he eyed me over from head to foot and then propounded the following question:

"By the way, stranger, who are you working for, anyway?"

Before I could answer I began to consider the matter as I looked at him smilingly. Then he went on:

"Are you working for the company?"

"What company do you mean, my young friend?" I replied.

"Why, are you working for the Root Co.?"

I smilingly told him I *guessed* I was, at least part of the time.

After he went on with his work I went on with mine, dropping potatoes. But the words kept ringing in my ears, "For whom are *you* working?" I tried to put them away and think of something else. But the question kept following me all day and into the night—"Whom are you working for—self and selfish interests? or are you working for God and your neighbors?"

I looked up at the stars and stripes that are floating every day in the wind from the flagpole on the fire-reservoir—the highest point on our buildings. Once more:

Am I working for A. I. Root or for the A. I. Root Co.? A. I. Root is not going to last many years, and may be not many months. The A. I. Root Co., God permitting, may last for years after A. I. Root himself is gone. The potatoes I am planting may, part of them, be for A. I. Root individually; but if we have any kind of yield, by far the greater part of them will help to save the life of the A. I. Root Co. Or they may be sold and help nourish humanity at large.

My good friend, you whose eyes rest on these pages, whom are *you* working for? Are you working for self, or are you considering humanity during these war times? Are you working for the good and future welfare of the children of your neighborhood or state or nation? Are you considering the unborn children? Are you planning and working for the benefit of posterity? Are you doing what you can to protect the coming generation from the devastating influences of strong drink? If you are old, like myself, are you ever tempted to say or think, "Well, there is no use in letting so much responsibility rest on my shoulders—the younger people may take care of it to suit themselves?" May God forbid that you or I should tolerate the thought.

Our text reads, "Him only shalt thou serve." I might have told the young man that I was working for God and the state of Ohio and for America, and the whole wide world as well; but I did not think of it then.

I have told you already, perhaps several times, what I said as I stood up in a union meeting at the Methodist church here in Medina nearly fifty years ago. Billy Sunday was not born at that time; but, as we are told, "coming events cast their shadows before," I hope a little of his shadow fell over me, at about that time. I stood up for the first time before the people of our different churches and declared that from that day and hour, God helping me, my principal work should be first and foremost for Christ Jesus, and for A. I. Root secondarily. I have tried in my poor feeble way to live up to that pledge for almost fifty years. I never thought of it before until that young man asked me for whom I was working. And then it came to me just last evening at our prayer-meeting that somebdy said in God's holy book, "Him only shalt thou serve;" and then I remembered also that precious text that has been a comfort for almost fifty years, "Seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you."

I have told you before that business did not suffer when I put Christ Jesus first and foremost. I began at the time hunting work for the numbers in our town who were out of a job. Sometimes, as I have told you, I set needy boys and girls to work when I had actually had nothing in sight for them to work at. I went to the Lord in prayer about it, telling him I had started them to work for *his* sake. The business did not suffer. It has grown and spread and multiplied, as you may know; and yet as I look back over the years I am impressed by the fact that all along A. I. Root has had too much prominence, and Jesus Christ not enough. Some good friend (I presume likely he is dead now) once said in the Kind Words department years ago, that it had been his privilege to know my humble self ever since the time when it was pretty much *all* self and *none* of Christ. As time passed, he said he was pleased to note that, altho there still was some self there was also some of Jesus. If I remember correctly he said he was looking forward to the time when it would be *none* of self and *all* for Christ. What does it mean, friends, to work for Christ Jesus? It means crowding out and putting down self.

My good friend Thomas B. Lanham, or "Tom" as the soldiers know him, in the absence of our minister occupied our pulpit a few Sundays ago. By the way, he stands "away up" in the Y. M. C. A. work, and especially the work among the soldiers. He said there was a point in his life when thoughts would occasionally come into his mind, especially when he was tired out, and he could not see much results from his work, that he would get to thinking that it was not much use in becoming *prematurely* old; that he was not appreciated, did not get much credit, and that he might as well take life easier. He said he had enough good sense, however, to recognize very soon that such thoughts came from the prince of darkness away down in his lair in the bottomless pit. He said he was glad to report that he had the good sense at such times to say, "Get thee behind me, Satan."

Once more, dear friends, whom are *you* working for? Is it "me and my wife, my son John and his wife, us four and no more*?" God forbid. Are you working might and main for the boys and girls in your neighborhod? Are you working might and main for these same boys and girls of the state of Ohio in helping to make "Ohio dry"? Are you working might and main that the United States of America just now may stand before the world with an unsullied reputation? Are you working might and main to see the American flag that is now floating, I trust, over or about your home, safely handed down to the children yet unborn, a "stainless flag," that the stars and stripes may be clean and pure before the great wide world? If not, suppose you take that question that has been following *me* day and night and ask *yourself* the simple question which that boy while working out in the rain put to me—"Well, who *are* you working for, anyway?" And may God give you grace to look up and say honestly, something as I did nearly fifty years ago, "I have been a busy man, friends, all my life, as you may know. I have worked at times fourteen and even sixteen hours a day, and I expect to be a busy man still; but, God helping me, from this day and hour my work shall be first for Jesus Christ, and self shall be second."

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*Toward the close of the 12th chapter of Matthew we are told that during Jesus' talk to the people some one told him "his mother and his brethren" were without and desired to speak with him. If I remember correctly we are told elsewhere that they feared he was wearing himself out with his incessant labor. Without stopping his sermon he paused long enough to say, "Who is my mother, and who are my brethren?" Then he stretched forth his hand and waved it over the multitude saying, "Behold my mother and my brethren; for whosoever shall do the will of my Father in heaven, the same is my father and sister and brother."

In the 10th chapter, toward the close, we read, "He that loveth father or mother more than me is not worthy of me; and he that loveth son or daughter more than me is not worthy of me. These family ties are all right; but we should constantly keep in mind that our Lord and Savior should come first, and be held up above all and *over* all.

Not many hours ago I listened to a most beautiful hymn sung by a young girl who is crippled for life. There is no hope that she will ever be able to get anywhere without the use of crutches. She comes from the Schauffler Home, in Cleveland—a charitable institution. She is anxious that she may, by the use of her voice, obtain a livelihood and not be dependent on any. I told her about the boy I met out in the rain and of the question he asked me. Said I, "My young friend, are you willing to dedicate that beautiful voice of yours to Christ Jesus and trust *him* to take care of the outcome?"

Her face lighted up, and at once with a glad smile she replied:

"*Yes*, YES, Mr. Root, that is it exactly. That is what I am doing and expect to do."

Now, friends, if a poor crippled girl is so ready and willing to dedicate and give all she has in this world for Christ's kingdom, can you not do as much, and pray for that glad time when Christ's kingdom *shall* come, and *his* will be done on earth as it is in heaven?

A FIELD MEET OF THE GROCERS OF THE CITY OF AKRON.

As our honey is mostly handled by grocers, and as it is also quite desirable that the grocers should know as much about the bee business as possible, the Akron grocers were invited to make a visit to our apiary. where they had a lunch of biscuit, butter, and honey. Just before the lunch your humble servant was invited to give them a talk; and this talk was substantially the same as the Home paper in this issue. (After the Home talk I gave them a brief account of my first start in bee culture, which has already appeared at various times in these pages. The grocers brought along their wives and children, and I believe they had a very pleasant time. There were something like fifty automobiles to bring the crowd to our place from Akron, twenty miles away.

The building in the background is the garage where the automobiles belonging to the company are kept in order. You can get a glimpse of the evergreen trees that were planted for a windbreak toward forty years ago. The limbs were originally allowed to come clear down to the grass in order to form a windbreak; but these up near the buildings have been trimmed off so as to permit automobiles to run over the lawn.

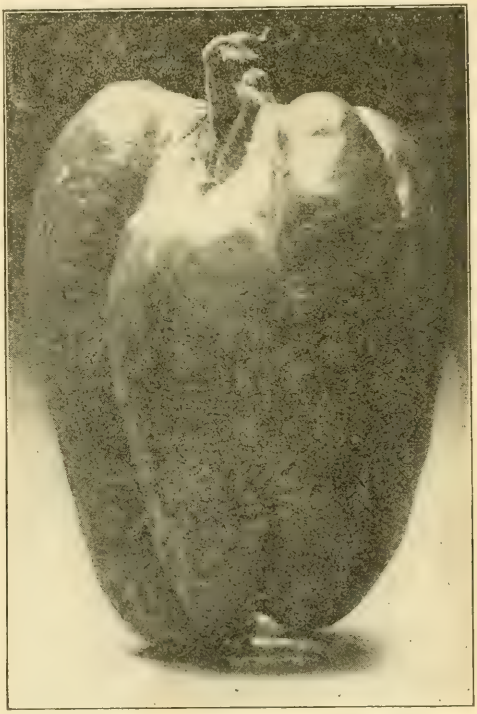
HIGH - PRESSURE GARDENING

THE CHAYOTE, A WONDERFUL NEW VEGETABLE TO HELP US OUT ON THE HIGH COST OF LIVING.

Some time about the first of the year I saw a notice in the Jacksonville *Times-Union* of a new, delicious, and nourishing vegetable called the "chayote." The vine looks much like that of the cucumber; but it stands over every year, or at least it does in California, and grows best on a trellis, something like a grapevine. The fruit, or squashes, or whatever you may choose to call them, are about the size and shape of a large pear; and the bulletin sent out by the Department of Agriculture in regard to it gives more than a dozen different methods of preparing dishes of the chayote. I at once applied to the Department of Agriculture, and in response received four fruits, or whatever you might call them. Now, this chayote, instead of having a lot of seed like a squash or cucumber, has only one large seed, right in the center. This seed looks like an enormous lima bean. Imagine a lima bean about as large as a small hen's egg, and then you have it; but instead of planting this bean, or seed, you plant the whole fruit; and if the fruit is not used right away when it comes to maturity it sends out roots and sprouts like a potato. The four fruits I received were already sprouted; and after being planted according to directions they were up and growing in less than a week. When we had that severe frost the first of February I saved them by covering them with empty sacks. The instructions given us say the plants should be from 15 to 20 feet apart; and the trellis had better be made overhead so the fruit will hang down, say high enough so that we may pick them handily.

Now hold your breath while I give you a most important fact in regard to this wonderful chayote. The government bulletin said a single vine, if properly cared for, would bear from 400 to 500 fruits in a year. When I left Florida, the last of April, one of the chayote-vines had got to the top of the trellis, and was climbing out overhead at the rate of several inches a day. An expert sent out by the Department took a kodak picture of my vine and gave me the astounding intelligence that single vines had already produced the astonishing number of over 1000 fruits in a year. The bulletin sent out said they would be fit to pick in September; but I was happily surprised to get notice from Wesley that my vines already had fruits ready to pick. Bear in mind they are to be picked before they become mature, like cucumbers, summer squashes, string beans, etc.

Well, today, June 4, we have just had our first meal of the four specimens of the chayote sent us by mail. Mrs. Root is a little more careful than I am; in fact, she claims that she can tell before the test is made how new fruits, vegetables, etc., will turn out, for I am so anxious (she says) to get hold of something new and wonderful that I am almost sure to say it is the "most delicious food I ever tasted." Well, this time she is the one first to pronounce it a really good vegetable. As I did not bring the directions with me, out of the dozen or more ways to prepare the different dishes of chayote we tried only steaming them as we do our summer squash. By the way, the *Times-Union* gave a picture of a trellis somewhere in California where the woman



A PICTURE OF ONE OF THE CHAYOTE FRUITS.

I am sorry I did not think to weigh or measure it; but it would pretty well fill an ordinary tall quart cup. Please notice the little plant shooting out near the stem. If I am correct, if the fruit is not gathered it will commence to grow like the above while on the vine. It is now planted out by the wire fence surrounding our poultry-yard; and while it may climb to quite a distance before frost, I hardly think we shall get any fruit here in Ohio, as it was not planted till the last of June.

who owned it made her living by selling the chayotes that were ready to pick every day from just one single vine.

Yes, it is true that I have been enthusiastic about a good many new things in years past that did not amount to very much after all; but several times I have been right about it. I was one of the first to recommend winter lettuce, and the first to introduce the Grand Rapids and to give it its name; and now it is a great industry (winter lettuce) almost all over the world—especially lettuce under glass; and the same way with celery and the dasheen. During the present great scarcity of food the dasheen, at least in the South, is coming to its own. In the course of four or five years I really expect all the northern seed-catalogs will " sit up and take notice," that dasheens can be grown profitably all thru the North.* From the fact that chayote will bear fruit (at least in Florida) in less than 100 days after the seed is planted, I do not see why they cannot be grown here in the North as well as in Florida and in California. At present I have not seen any seeds or fruits advertised for planting, in any of the Florida papers; and I do not know whether the Department of Agriculture is now prepared to furnish fruits for planting or not. I think, however, they will send information in regard to the plant on application. Address Plant Introduction, Department of Agriculture, Washington, D. C.

Since the above was put in print I find the following in the Year Book of Agriculture for 1916:

> The chayote (*Chayote edulis*), a little-known vegetable from tropical America, has been successfully grown in a limited way in California, Louisiana, and Florida, and can possibly be grown successfully in other parts of the country where the temperature does not fall much below freezing.
>
> Many of those who have eaten the chayote consider it superior to our summer squash or vegetable marrow. The plant is a perennial vine that is comparatively easy to grow. The single-seeded, pear-shaped fruits, light green or creamy white in color, are produced in quantity in the fall and can then be used or stored and used as a fresh vegetable thruout the winter.

POTATOES IN SIXTY DAYS.

I hold in my hand today, July 6, three potatoes the size of good big hens' eggs. They are not an early variety either; but they grew from some late potatoes that I found in my son-in-law's cellar when we got back from Florida. The potatoes had thrown out sprouts with some rudimentary leaves. I planted them carefully, and today I find the ground bulging up around the hills. The main point to my little story is this: If you want potatoes extra early, get them nicely sprouted in the cellar or in some better place, with leaves and roots also; and if you plant them out as soon as the weather is suitable, you will be ahead two weeks or more. The principal point now is to devise the best method of getting them thus started in some suitable place. Some kind of rich soil will very much facilitate matters; and I am greatly interested now in getting the very best soil for starting potatoes in the spring before they can be planted outdoors. The best success I have had so far is with old well-rotted poultry manure. Now will somebody who is competent tell us the very best chemical fertilizer to add to this very best "potting soil?" Old well-rotted stable manure, with the proper admixture of sand, is, generally, probably the best thing available.

THE DASHEEN COMING TO ITS OWN.

One of our good friends, Mr. D. V. Fisher, of Omaha, Neb., sends us the following, but does not tell from what paper it was clipped. By the way, we have dasheens growing nicely in our Ohio garden this 27th day of June; and this is the fourth season we have succeeded nicely in growing it here in Ohio. Now here is the clipping. The fellow who wrote it is "some writer." I wish I could give him credit.

> THE POTATO IS DEAD; LONG LIVE DASHEEN!
>
> Down with the potato.
>
> Bury it and cover it up. Pan it. Roast it. Bite its eye out.
>
> Dasheen has come to take its place. Dasheen is not a new kind of sand soap, a patented ice-cream freezer, nor a fresh bit of profanity, nor is it a toilet water. It comes in baskets from "the south." "The south" doesn't get it from anywhere. It "just growed" there.
>
> You cook it like a potato. Eat it like a potato.
>
> It is just like a potato; only that some dasheens are bigger than some potatoes, and some dasheens are smaller than some potatoes. A few dasheens likewise are the same size as some potatoes.
>
> The superiority of the dasheen over the potato lies in the fact that dasheen is a substitute for the potato, whereas a potato is only a potato.
>
> You boil it with or without the skin, which comes already on the dasheen.
>
> The dasheen is boneless.
>
> And it's a mighty fine vegetable, and very timely. Dashed if it isn't!

" THE LEWIS PUBLISHING COMPANY, OF UNIVERSITY CITY."

The following, clipped from the *Rural New-Yorker* for May 12, explains itself:

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* In the Yearbook of the Department of Agriculture for the year 1916 a whole chapter of 9 pages is given in regard to the dasheen, with 14 beautiful illustrations. Among the illustrations of different ways of cooking is a picture of the dasheen caserol, stuffed dasheen in the " half shell," dasheen crips, and rolls made from wheat flour in combination with dasheen. With suitable soil and plenty of water it is an easy matter to get dasheens as tall as a man's head, and from a peck to half a bushel of tubers from a single hill, down in Florida.

> Referee in Bankruptcy Coles today ordered the division of $37,936.75 among 275 creditors of the bankrupt Lewis Publishing Company of University City. Each creditor will receive 1.675 per cent of his claims.
>
> Liabilities of the company were fixed at $2,211,055.26 when it made voluntary declaration of insolvency. Matt G. Reynolds is trustee.

The above notice appeared in the daily papers of St. Louis on April 17, 1917. The creditors realized a little more than a cent and a half on the dollar. Lewis apparently squandered the 97½ cts. This record should prove interesting to those whom Lewis is soliciting to invest in his new Atascadero, California, schemes.

Some years ago, when GLEANINGS, together with the *Rural New-Yorker*, exposed the tricks of the Lewis Co., quite a lot protested, declaring that Lewis was all straight, and would do all he agreed, etc. From the above you can see how it turned out. With over two million dollars sent him, largely by poor people, of their hard earnings, and mostly women at that, they get back only a cent and a half on the dollar. We might drop the matter right here and call it "spilled milk" were it not for the fact that this same Lewis is out in California trying to do the same thing over again, or, what is worse, that he is succeeding, at least to a certain extent, in doing the same thing over again. Before investing your hard earnings in the future, dear friends, you had better listen to the *Rural New-Yorker;* and if you will not think me immodest I should like to add, listen to your old friend A. I. Root.

FERTILE EGGS FOR HATCHING.

On page 219 of our March issue I mentioned taking six dozen eggs down to Florida, and that I got only 18 chicks from them; and I said there were two reasons for the poor hatch. First, some of them were a month old or more; second, I carried the six dozen eggs in my grip over a thousand miles. Well, in order to test the matter a little further to see where the trouble lay, about the last of April I put 20 more fresh eggs in my grip, packed in bran as before. The eggs carried safely, and only one was broken, and that by accident after it reached Medina. The 19 were put under two hens, and every egg showed strong fertility. From the 19 eggs I got 18 nice strong chickens; and yesterday, June 5, every chicken was pretty well feathered out, and strong and healthy. This morning I found one dead, without any apparent reason. But I feel pretty well satisfied with the experiment after all, for it demonstrates conclusively that strictly fresh eggs will bear long shipment all right if properly packed, but that it is poor policy to undertake to get chicks from eggs over a month old. One more point is that the Eglantine strain of White Leghorns—at least so far as my experience goes — give eggs of remarkable fertility. Nineteen fertile eggs out of twenty is pretty good; and if the one had not been broken by accident, very likely every egg would have proven fertile.

HEALTH NOTES

CORN MEAL AND "HIGH COST OF LIVING."

Our readers will recall that our remark on corn meal, page 302, was given with something of a word of caution; therefore we take pleasure in giving the following:

> *Mr. Root:*—Your article on corn meal, page 302, is so misleading that I feel it a duty I owe the subscribers to make a few comments. If you will refer to Farmers' Bulletin No. 142 you will see that corn meal is not a *balanced ration* (a balanced ration must have about 14 per cent protein, page 48 bulletin), and, when eaten without something to balance, it is dangerous (page 45). Corn meal has only 7.8 per cent of digestible protein (page 28), and requires to balance it about a dozen eggs, 2/3 lb. cheese, 1 lb. beef, or 1 lb. of beans, which, added to the corn meal, makes it much more expensive than oatmeal, which costs but little more, and is already a balanced ration. Children fed on corn meal alone will get sick and stop growing. I have seen it tried. Southern darkies live on corn meal, but they do love chicken, which balances the corn meal. Persons living on an unbalanced ration will soon crave something that balances their ration. Everybody should have bulletin No. 142 and study it, if they wish to economize and still be healthy.
>
> Hamilton, N. J., April 21. C. E. FOWLER.

Perhaps I should add that it is pretty generally accepted that corn meal alone is not a safe food for chickens—especially very small ones. If the chickens, however, have a run outdoors they might get along very well. But years ago, when our young chicks died in considerable numbers, it was generally agreed that it was because they had too much corn meal, or an exclusively corn-meal diet, when they were quite young. Notwithstanding all the above, however, I think many people and many families would not only save money but have better health by using considerably more corn meal in some shape than they have been using.

VEGETABLE BUTTER AND COWS' BUTTER; BY A SOUTHERN MAN WHO CAN SPEAK FROM BOTH SIDES OF THE QUESTION.

> *Mr. A. I. Root:*—I have just read your article on page 301, April issue, about the "high cost of"—butter. I see you have been deceived by the oleo people with their one-sided statement of the case. Being a Southern man, and making for sale cotton-

seed, peanuts, and butter, I think I am in position to see both sides of the matter.

In the first place, butter is not high, relatively. It has far less purchasing power now than a few years ago. Then I could take a pound of butter to the store and pay for ten pounds of flour or two pounds of ham; now it will pay for only five pounds of flour or less than a pound and a half of ham. The oleo people have been flooding the country and besieging congress with just such appeals to make it appear that they are great friends of the Southern farmer, when the fact is that the amount of peanut and cottonseed oil used in oleo is very small compared with that used in shortenings and for other purposes. I think, if you will investigate, you will find that the amount of vegetable oil used in oleo would not justify Dr. Kellogg in using it as a vegetable product.

The manufacturers have the privilege of making and selling all the oleo they choose without paying the ten-cent tax *provided* they do not color it in imitation of butter and sell it as such—but will sell it for what it is. The poor man also has the privilege of buying all he wants without paying the tax; but he does not want to get that when he thinks he is getting butter. Uncolored oleo has only a nominal tax, the larger tax being only for the purpose of preventing its being colored and sold as butter. Properly made of wholesome materials, oleomargarine is a perfectly wholesome and legitimate product; but when colored and sold in imitation of butter, it comes into unfair competition with the dairyman who has to contend with the constantly increasing cost of feed and labor. Mill feeds which sold a few years ago for $1.50 per hundred now bring $2.50; and cottonseed meal (one of our best and most popular dairy feeds) sells for twice what it did.

Besides all this, the constantly increasing dairy industry of the South is far more important than the small amount, comparatively, of vegetable oils used in oleo.

The tax does not seem to have hurt the manufacturers or the Southern farmers, for we have gotten as high as $1.00 per bushel (30 lbs.) for our cottonseed this winter, and peanuts have sold well. The latter, however, are controlled by a trust, and are not as high relatively.

The oleo manufacturers' professions of interest in the Southern farmers reminds me of the express companies' concern for the country merchants in the parcel-post matter.

I cannot close without expressing my appreciation of your splendid articles in GLEANINGS, and the noble work you are doing in preaching right living. RICHARD B. HUNTER.

Arcola, N. C., April 4.

TEMPERANCE

"WAR-TIME PROHIBITION."

This institution, comprising some of our best and greatest men, headed by Prof. Irving Fisher, sends out the following report:

To the Editor:—The Connecticut Manufacturers' Association, representing over 200 of the leading manufacturers of that state, passed a resolution favoring complete war prohibition by a vote of 176 to 1. That was remarkable.

The American Medical Association, the most representative body of its kind in the world, at its national convention in New York this month adopted resolutions declaring alcohol to be neither a food nor a stimulant. That was remarkable.

The National Conference of Charities and Correction violated its custom of passing no resolution on a controverted subject, and, recognizing the patriotic character and overshadowing importance of the question, unanimously adopted the resolution appearing in the enclosure. That was remarkable.

Will it seem over-presumptuous to suggest that these three remarkable events in the field of commerce, science, and social health and morals, are worthy of editorial comment?

W. G. CALDERWOOD,
Washington, D. C., June 14. Executive Secretary.

MORE "RIGHTEOUSNESS" AND LESS "INIQUITY."

The *National Stockman and Farmer* very appropriately gives place to the following boiled-down self-evident truth:

Speaking of the need of the suppression of the use, sale, and manufacture of intoxicating liquors thruout the United States the Pomona Grange of Delaware County, Ohio, in a petition says:

"We are for more beef, beans, bread, and butter, and less beer, booze, and bums; more wheat, wealth, and wisdom, and less whisky, waste, and want; more milk, molasses, and money, and less malt, misery, and meanness; more apples, alfalfa, and amity, and less ale, ailments, and animosity; more rice, rye, and reason, and less saloons, sin, and suffering; more dress, dainties, and dishes, and less distilleries, drunkards, and disturbances; more beets, barns, and business, and less breweries, brawls, and burials; more sheep, swine, and sugar, and less sherry, sham, and shame; more potatoes, pumpkins, and peaches, and less port, punch, and poison; more corn, cabbage, and cheese, and less champagne, chaff, and cheat; more harmony, homes, and heaven, and less hofbrau, havoc, and hell."

THE SIXTY MILLION BUSHELS OF GRAIN USED BY THE BREWERS EVERY YEAR.

From the *Methodist Temperance Bulletin* I make two clippings. Below is the first one, from Dr. Wiley:

Dr. Wiley, the pure-food expert, recently said, "American distillers use enough grain every year to feed one-eighth of the American population." A startling fact.

Here is what the brewers have to say. While reading it, please keep in mind what a parade they made some two years ago about the grain they purchased from the poor farmers:

The brewers say all the food value of the grain reaches the people in the beer; all of the food value of the grain and more reaches the cattle in the refuse; the grain used in making beer is not fit for anything else anyhow, having no food value; and in the last place they don't use any grain to speak of in the first place.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Light-amber extracted honey of good flavor, ripened on the hive. Write for prices and sample. J. W. Potts, Gunnison, Miss.

FOR SALE.—5000 lbs. finest new clover honey in 5 and 10 lb. pails in shipping-cases. Will be sold to best bidder or bidders. How much do you need? R. C. Wittman, St. Marys, Pa.

FOR SALE.—Raspberry, basswood, No. 1 white comb, $3.00 per case; fancy, $3.25; extra fancy, $3.50; 24 Danz. sections to case, extracted, 120-lb. cases, 15 cts. per lb.
W. A. Latshaw Co., Clarion, Mich.

RASPBERRY HONEY.—Was left on the hives until thoroly ripened by the bees. It is very delicious. It is put up for sale in 60-lb. tin cans. Price $9.00 a can; 1-gal. cans of 12 lbs. net weight, $2.00 each. Sample by mail 10 cts., which may be applied on any purchase of honey.
Elmer Hutchinson, Rt. 2, Lake City, Mich.

HONEY AND WAX WANTED

WANTED.—Comb and extracted honey.
J. E. Harris, Morristown, Tenn.

WANTED.—Extracted light and amber honey. Give quantity and lowest cash price; can use good clean beeswax. D. H. Welch, Racine, Wis.

WANTED TO BUY a quantity of dark and amber honey for baking purposes.
A. G. Woodman Co., Grand Rapids, Mich.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—Extracted light and amber honey of good body and flavor from any state in the Union. Send sample with lowest cash price.
M. E. Eggers, Eau Claire, Wis.

WANTED.—White and light amber extracted honey, in any quantity. White clover and raspberry preferred.
I. J. Stringham, 105 Park Place, New York.

WANTED.—Extracted light honey of good flavor, white clover preferred. Kindly send sample, and quote lowest price delivered at Richmond, N. Y.
J. Stevenson, Richmond, S. I., N. Y.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

"BEST QUALITY" Foundation for sale.
J. J. Angus, Grand Haven, Mich.

THE PERFECT Bee Frame Lifter. For descriptive circular address
Ferd C. Ross, Box 194, Onawa, Iowa.

We carry a complete line of bee-supplies. Ask for our bee-supply catalog. Let us quote you on your requirements. Deroy Taylor Co., Newark, N. Y.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

SEND TODAY for samples of latest Honey Labels. Not only the most attractive, but also the lowest in price. Samples free. Liberty Pub. Co., Sta. D, Box 4-E, Cleveland, Ohio.

FOR SALE.—30 Root 8-frame hives with supers and inside fixtures for the 4x5 plain sections, and also 20 extra supers for same. Price is right.
G. L. Allen, Wysox, Pa., R. D. No. 4.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; Gleanings and all kinds of bee literature. Get the best. Catalog free.

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300 gal. wire screens, nearly new, for 8-frame hives; 1 canvas and frame, 12 x 24; summer house; has 2½ wide screened space all around to be opened at will; just the thing for out-apiaries or camping. Used 3 months. F. W. Morgan, DeLand, Ill.

WANTS AND EXCHANGES

WANTED to hear from W. D. Hurt at once.
W. A. Cheek, Merino, Colo.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED.—To hear from everybody who would like to earn money making comb foundation.
J. J. Angus, Grand Haven, Mich.

WANTED.—Shipments of old comb and cappings, for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

GOATS

MILCH GOATS.—"Profit and Pleasure in Goat-Keeping," pronounced by experts the best goat book, regardless of price; profusely illustrated; by mail, 35 cents. Fred C. Lounsbury, Plainfield, N. J.

PATENTS

PATENTS SECURED or all fees returned. Patents sold free. Read "Patent Sales Dep." of our 190-page Guide Book, FREE. Send data for actual free search. E. E. Vrooman & Co., 834F, Wash., D. C.

REAL ESTATE

FOR RENT.—Small house and 20 acres of land near Dade City, Florida, on Lake Pasadena.
Steen Freeman, Wamsley, Ohio.

FOR SALE.—1½-acre home with 200 stands of bees adjoining good railroad town; full equipment, no disease; finest location and climate in Northern California. No failures. Sacrifice $2500.
Ray Tait, Hornbrook, Cal.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free. C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

SOUTHERN FARMERS ARE PROSPEROUS and contented. Favored by nature with mild climate, long growing season, and abundant rainfall, fruit, poultry, stock, trucking, and general farming succeed amazingly here. Little farms in Shenandoah Valley, colony of Little Planters, $250 and up, complete, on easy payments. Good near-by markets, excellent transportation, low freights. Full information on request. F. H. LaBaume, Ag'l Agt. N. & W. Ry., 246 N. & W. Bldg., Roanoke, Va.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

Well-bred bees and queens. Hives and supplies.
J. H. M. Cook, 84 Cortlandt St., New York.

When it's GOLDENS it's PHELPS. Try one and be convinced.

FOR SALE.—Italian queens. See large advertisement elsewhere. H. B. Murray, Liberty, N. C.

FOR SALE.—Golden Italian queens. Untested queens 60c each. J. F. Michael, Winchester, Ind.

Phelps' queens will please you. Try them and you will be convinced.

FOR SALE.—Bees, queens, and honey in their season. H. G. Quirin, Bellevue, O.

Queens for July and later delivery. No more rush orders till July 1st.
J. E. Wing, 155 Schiele Ave., San Jose, Calif.

Untested Italian queens for sale.—1, $1.00; 3, $2.75; 6, $5.00; 12, $9.00. Satisfaction guaranteed. F. L. Johnson, Mt. Airy, N. C.

ITALIAN BEES AND QUEENS.—1, $1.00; 12, $9.00. Satisfaction guaranteed.
A. E. Crandall & Son, Berlin, Conn.

Three-banded Italian queens and a few hundred pounds of bees for sale. Safe arrival guaranteed.
J. A. Jones, Rt. 3, Greenville, Ala.

FOR SALE.—40 colonies of Italian bees. For particulars address
Henry S. Smith, Brooklyn, Wis.

FOR SALE.—Warranted queens from one of Dr. Miller's breeders, 50 cts. each.
Geo. A. Hummer, Prairie Point, Miss.

Warranted purely mated Italian queens, $1.00. Safe arrival guaranteed.
J. B. Mason, Mechanic Falls, Me.

FOR SALE.—190 colonies of Italian bees. Ideal location for rearing queens and combless bees; two miles from New Orleans.
M. Stevenson, Westwego, La.

Tested leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Vigorous prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing.
A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Italian queens, THE HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

"She-suits-me" bright Italian queens; $1 by return mail till Oct. 1.
Allen Latham, Norwichtown, Conn.

Business first queens. Select untested, $1.00 each; $9.00 a dozen; no disease. Price list free.
M. F. Perry, Bradentown, Fla.

Queens that boost your bank account, three-band or golden. Untested, 75 cts.; tested, $1.00; select, $1.50. J. B. Marshall & Son, Rosedale Apiaries, Big Bend, La.

Finest Italian queens, June 1 to November, $1.00; 6 for $5.00; my circular gives good methods. Ask for one.
J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

FOR SALE.—Bright Italian queens at 65 cts. each; $6.50 per doz.; ready April 15. Safe arrival and satisfaction guaranteed.
T. J. Talley, Rt. 3, Greenville, Ala.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each.
Henry S. Bohon, Rt. 3, box 212, Roanoke, Va.

Golden and three-banded Italian queens for July, Aug., and Sept. Now, only 50 cents each, 6 for $3.00, 12 for $6.00, virgins 30 cts.
G. H. Merrill, Pickens, S. C.

FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, $1.00; tested, $2.00.
Wallace R. Beaver, Lincoln, Ill.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1; 6 for $5. Wm. S. Barnett, Barnetts, Va.

QUEENS OF SUPERIOR QUALITY.—Untested, 75c each, $8.00 per doz.; select untested, 90 c each, $9.00 per doz.; select tested, $1.50 each, $15.00 per doz.; extra select breeder, $5.00.
H. N. Major, South Wales, N. Y.

FOR SALE.—Three-band Italian queens from best honey-gathering strains obtainable. Untested queens, 75 cts.; 6, $4.25; 12, $8.00. Safe arrival and satisfaction guaranteed.
W. T. Perdue, Ft. Deposit, Ala.

GOLDEN ITALIAN QUEENS.—No more orders filled after Sept. 1. Untested queens, each, 75 cts.; $8.00 per dozen; $60.00 per 100; tested, $1.50 each. Prompt service and satisfaction guaranteed.
L. J. Dunn, 59 Broadway Ave., San Jose, Cal.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, $1.00; 6, $5.00; tested, $2.00; breeders, $5.00 to $10.00.
J. B. Brockwell, Barnetts, Va.

QUEENS.—Improved three-banded Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, $8.00; select, $1.00; dozen, $10.00; tested queens, $1.25 each; dozen, $12.00. Safe arrival and satisfaction guaranteed.
H. C. Clemons, Rt. 3, Williamstown, Ky.

GOLDEN ITALIAN QUEENS! ! ! From the best stock; they produce Golden bees unexcelled as honey-gatherers; very gentle; no disease. Select tested, $1.25; tested, $1.00; select untested, 75c; untested, 65c; virgins, 35c. Special price on one-half dozen or more. Golden Queen Apiaries, R. Kornegay, Jr., Prop., Mt. Olive, N. C.

Bright Italian queens for sale at 60 cts. each, $6.00 per doz.; virgins, 25 cts. each. Safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

FOR SALE—100 colonies Italian bees, wired combs, 50 in 10-frame hives, 50 in 8-frame; new hives, covers, and bottom boards; $6.00 per colony.
E. L. Lane, Trumansburg, N. Y.

FOR SALE.—Italian bees and queens. One-pound, two-pound, and three-pound packages, with queens; also on frames and full colonies. Ask for our price list, free beginner's book, and bee-supply catalog.
Deroy Taylor Co., Newark, N. Y.

My bright Italian queens will be ready to ship April 1 at 60 cts. each; virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

GOLDENS THAT ARE TRUE TO NAME.—One race only, unt., each 75 cts.; 6, $4.25; 12, $8.00. For larger lots write for prices. Tested, $1.50; S. T., $2.00; breeders, $5.00 and $10.00.
Garden City Apiaries, San Jose, Cal.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

None but the best Queens are sent out by us—three-band Italians that are guaranteed to give satisfaction. Untested queens, 75c; $8.00 per doz.; tested, $1.00 each. No disease. Orders filled promptly. J. W. K. Shaw & Co., Loreauville, La.

Golden Italian queens that produce gentle golden bees; good honey-gatherers; no foul brood. Select tested, $1.25; tested, $1.00; untested, 65 cts.; 6, $3.75; 12, $7.00. No nuclei or bees for sale.
D. T. Gaster, Rt. 2, Randleman, N. C.

FOR SALE. — Three-band Italian queens from best honey-gathering strains obtainable. Untested queens, $1.00; 6, $5.00; 12, $9.00; tested queens, $1.50 each; 6, $8.00.
Robt. B. Spicer, Wharton, N. J.

Queens, Queens, Queens. We are better prepared than ever to supply you. Untested, 55c each; tested, $1.00 each; select tested, $1.65 each. See our big illustrated ad on first leaf of this journal.
W. D. Achord, Fitzpatrick, Ala.

My choice northern-bred Italian queens are hardy, vigorous, and prolific. May and June, untested, $1.50; select unt., $2.00; tested, $3.00; after July 1, unt., $1.00; select unt., $1.25; tested, $2.00; select tested, $2.50. Free circular.
F. L. Barber, Lowville, N. Y.

Golden Italian queens from a breeder that was a first-premium winner at Illinois State Fair in 1916; untested, 75 cts.; six for $4.25; doz., $8.00; select untested, $1.00; 6 for $5.00; 12 for $9.00; tested, $1.50; 6 for $8.00.
A. O. Heinzel, Rt. 3, Lincoln, Ill.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; dozen, $9.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Son, Wilcox St., Binghamton, N. Y.

North Carolina-bred Italian queens of Dr. C. C. Miller's famous strain of three-banded Italian bees; July 1 until Oct. 1, untested, 75 cts.; per doz., $8.00; tested, $1.00; doz., $11.00; select tested, $1.50. Safe arrival and satisfaction guaranteed.
L. Parker, Rt. 2, Benson, N. C.

ITALIAN QUEENS, northern-bred, three-banded, highest grade; select untested, guaranteed; queen and drone mothers are chosen from colonies noted for honey-production, hardiness, prolificness, gentleness, and perfect markings. Price, one, $1.00; 12, $9.00;; 50, $30.00. Send for circular.
J. H. Haughey, Berrien Springs, Michigan.

FOR SALE.—45 colonies of bees, about 400 combs in Hoffman frames and other accessories, $100.00.
S. K. Best, 1660 Emma St., Youngstown, O.

FOR SALE.—350 colonies of bees, mostly 10 frame, complete equipment of comb and extracting supers, tanks, sheds and shop, extractor and all supplies on hand. Possession by Stpt. 1. Object of sale, re-entering college.
Elton S. Stinson, Nampa, Ida.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money refunded by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

Put a good queen in each colony now, when good queens can be had promptly at low prices. The wise beekeeper does not buy queens in spring when they are scarce, high in price, delivery uncertain. He buys now and insures disease resistance, safe wintering, and a good honey crop. Our Italian queens give these three qualities and are now at their best; 1, 75 cts.; 6, $4.25; 12, $8.00; 25, $15.00; 100, $50. J. B. Hollopeter, Queenbreeder, Rockton, Pa.

Golden 3-band Italian and Carniolan queens: Virgin: 1, 50c; 6, $2.50; 12, $4.00; 100, $25.00. Untested: 1, 75c; 6, $4.20; 12, $7.80; 100, $60.00. Select untested: 1, 85c; 6, $4.80; 12, $9.00; 100, $70.00. Tested: 1, $1.00; 6, $5.40; 12, $10.20; 100, $80.00. Select tested: 1, $1.25; 12, $13.80; 100, $100. Breeders: $3.00 each. Bees in combless packages: ½ lb., 75c; 1 lb., $1.25; 2 lbs., $2.25. Nuclei: 1 frame, $1.25; 2 frames, $2.25; 3 frames, $3.00. Add price of queens wanted. We guarantee safe arrival and no disease.
C. B. Bankston, Buffalo, Tex.

Queens of my own and Dr. C. C. Miller's 3-banded select stock the rest of this season, 75 cts. each; $65.00 per 100; tested, $1.50 each; $15.00 per dozen; breeders, $5.00 and $10.00. A fine breeder sent on two frames of brood in nuclei, $10.00.
Curd Walker, Jellico, Tenn.

I think so much of my Walker queens and bees that I have been able to induce my friend Mr. Walter Hall to try one. I am quite sure he will find them as good as I recommend. I have in my apiary queens from four different breeders of queens, but the Walker beats them all. When I want more queens yours are good enough for me even if the price is a little steep. J. M. Meadows, Dorton, Tenn.

HELP WANTED

WANTED. — An experienced apiarist. State wages wanted, and experience; about 4 months' work. W. A. Cheek, Merino, Colo.

TRADE NOTES

BEESWAX MARKET.

With a slackening demand the market for beeswax is easier, and it is offered at prices at least three to six cents per pound lower than were being asked several weeks ago. The wax which we take in from this time on for some months is accumulated for next season's use in making comb foundation. Since we shall not need it for some time, we are not so keen to buy as we were a few weeks ago in the height of the season. In view of an easier market and a less urgent need we reduce the price we pay from this date to 36 cts. per lb. cash, or 38 cts. in trade delivered in Medina. One to two cents less at our branches.

GLASS JARS FOR HONEY.

After a good deal of delay we have furnished the 1-lb. round jars offered in the April issue from Alton, Ill., to those who placed their orders in response to that notice. We also laid in a stock of a car each in Chicago, Des Moines and St. Paul, which we offer for a short time, to reduce stock, at $1.10 per case of 2 dozen; 6 cases for $6.30; 30 cases or more at $1.00 per case. These prices are below present values, and the revised prices in our new issue of the catalog now in preparation are 10 cts. a case higher. Send in your orders direct to our Des Moines, St. Paul, and Chicago branches, mentioning this notice, and get them in during this month of August, remittance accompanying the order, to avail yourselves of this special price.

HONEY CANS AND PAILS.

The new catalog in preparation will have still higher prices on cans and pails, tho not as high as recent quotations from several factories would require if we had to buy on today's market. We have a good stock, bought some time ago, and for a short time only will accept orders at the prices last issued, which are below what we would have to pay if we were buying today. These prices, available for a short time only, are as follows:

Five-gallon cans, 9 to bundle, weight 23 lbs., $3.60. Five-gallon cans, 50 to crate, weight 190 lbs., $20.00. Five-gallon cans, 2 to box, $1.25 each; 10 for $12.00. Five-pound friction top pails, $17.00 per crate of 200; 50 for $4.50. Ten-pound friction-top pails, $13.00 per crate of 100; 50 for $6.75.

With such high prices prevailing on new cans there has been an unusual call for second-hand cans, and we have been oversold all season, and have none to offer now. We have been getting for good second-hand cans as much as new cans sold for two years ago, and still we cannot supply the demand for them.

OLD-STOCK SHIPPING-CASES.

In view of the advance in price of new-stock shipping-cases for 24 sections, comb honey, of $4.00 per 100 over list prices, the old stock which we have been closing out becomes more attractive when you compare prices at which these are offered with new prices. We still have available here and at some of our branch offices quite a lot of 12 and 16 lb. cases for sale at $8.00 per 100 for 12-lb.; $8.50 for 16-lb. We have the largest stock for the 4¼ x 1½-inch plain section. In an emergency these could be used for ten 4¼ x 1⅞ sections. If interested let us hear from you, stating the size of section you want to case, and we will advise you what we have to offer.

We also have several hundred nailed-up cases, once used, and good for use again. These are offered at $10.00 per 100 as they are. If new corrugated pads and drip-papers are furnished, add $2.00 per 100 to provide these. We have the largest stock for regular 4¼ x 1⅞ sections, but have also some of the other sizes. Let us hear from you if you can use any of these. If carriers are wanted to reship your comb honey, add 75 cts. each. These hold 8 cases each.

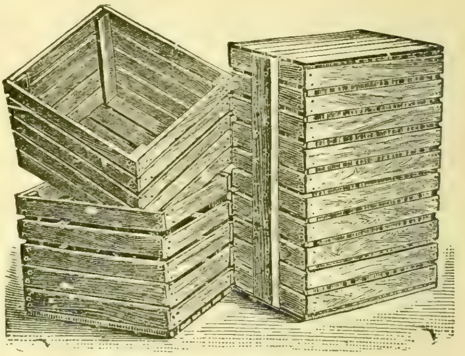
ADVANCED PRICES.

As we go to press we are preparing to issue another edition of our catalog with prices revised to date. This is a general revision involving almost everything listed. A very few items are left unchanged in the retail list. Others are advanced ten to forty per cent, the average advance being about twenty per cent. All hives and parts of hives, supers, frames, section-holders, separators, sections, shipping-cases—in fact, practically everything made of wood as well as metal—are marked up. The advance in the price of lumber at present over prices prevailing a year or eight months ago is, for such grades and kinds as we use, fully forty per cent. In fact, to secure an adequate supply of dry pine for hives we have paid for a large lot of a higher grade than we ordinarily use one hundred per cent more than we were paying a year ago. In view of these advancing costs we believe the moderate advance we are making will be considered reasonable and entirely justified under the existing circumstances.

We had hoped to give in these columns in detail many of the new prices, but find we do not have time before going to press to get them into type. We will mention only a few of the outstanding changes. Sections of all styles are advanced $1.50 per 1000. Shipping-cases, $4.00 per 100 in regular and safety styles. Honey-extractors are again marked up ten per cent, making twenty since the first of the year. Hoffman frames are up 70 cts. per 100; shallow frames are up 50 cts. per 100. Section-holders and fences are marked up 50 cts. per 100. Hives and supers in general about 20 to 25 per cent. If interested, send for revised catalog, which we hope to have in print early in August.

METAL SPACERS SLIGHTLY DEFECTIVE.

In making the metal spacers for the metal-spaced frames there is a percentage which come out either sheared a little scant on one side, or with slight breaks in the tin where it is drawn up into the spacing-boss. These are hardly passable as perfect stock, but in actual use they will answer every purpose as a spacer. Rather than throw these into the scrap we will offer them while they last, including nails to nail them on, at 25 cts. per 100; $2.25 per 1000. Transportation charges extra.



BUSHEL BOXES FOR POTATOES.

In order to realize cost at the new higher price of lumber we shall of necessity have to mark up the price of bushel boxes. These are seasonable just now for handling the new crop of potatoes, which ought to be large if not blighted. As we have a good stock of these boxes, as shown, we will accept orders for a short time, only to reduce stock, at former prices; namely, $2.40 per crate of 14, all slatted, or $22.80 for 10 crates. Two boxes are nailed up; and twelve more, including the nails, are packed inside. Crate weighs 90 lbs. Orders should be sent to Medina.

Special Notices by A. I. Root

GOOD BOOKS BY PROF. SHANNON.

I have several times of late, as our readers may remember, mentioned Professor Shannon's "purity" books. Well, I find on my table three booklets. The title of the first one is, "Did God make Boys and Girls equally Good?" This book contains 27 pages. To give you an inkling of its contents I quote the first paragraph:

"Each year I address tens of thousands of bright, hopeful boys and girls in our public schools and Sunday-schools. I begin one address by asking, "Did God make boys morally better than girls?" To this question comes only one reply, "No." As a second question, I ask, "Did God make girls to be better than boys?" Here I often find a difference of opinion; some holding that he did, nearly all holding that he did not. To the question, "Did God make boys and girls equally good?" the replies quite generally indicate that they believe he did. Then, I ask, "If God made them to be equally good, why do boys and men swear a hundred times where girls and women swear once; use a ton of tobacco where girls and women use a pound; drink a barrel of whisky where girls and women drink a pint; twenty go to jails, reformatories, and penitentiaries, where one girl or woman goes?" This is a puzzling question to them. Many are ready to believe that perhaps after all God made girls better than he made boys."

The second book is entitled, "Did God make *Men* and *Women* Morally Equal?" I quote from this book two paragraphs from the first page.

"In our land and age more women accept Christ and unite with the churches than men. Twenty times as many men are in our jails, reformatories, and penitentiaries as women. In respectable society men swear a hundred times where women swear once; drink a barrel of whisky where women drink a pint; use a ton of tobacco where women use a pound; sow their 'wild oats' where women must sow purity and love.

"That women are better than men by practice, I cheerfully admit. That women are better by nature than men, I positively deny."

This booklet has 29 pages.

The last one on the list is a booklet of 27 pages entitled "Modern Use of Tobacco," by D. H. Kress, M. D. It comes from the No-tobacco League of America. I make quotations from it as follows, from pages 7, 8, and 25.

"A cable message from London to the *Chicago Tribune* stated: 'The cigaret is playing havoc with the British army, and if something is not done soon, Great Britain will be defended, or rather left undefended, by a collection of weak-minded and weak-bodied youths incapable of real effort.'"

"We are rapidly becoming a nation of smoke-inhalers; and the number which we now produce, including imported and hand-rolled cigarets, amounts to about one hundred millions a day."

"The people of the United States are now spending annually one and one-half billion dollars for tobacco. This is twice as much as we spend for bread, three times as much as we spend for education, and five times as much as we spend for Christianity. Our tobacco money would buy all our drygoods, including boots and shoes, and have a surplus large enough to pay all expenses of our army and navy. Our tobacco bill amounts to about $50 per second, night and day. It is not possible for a nation that persists in this reckless manner to poison itself, long to survive."

The above extracts will, I think, convince you, without doubt, the importance of having these booklets read and studied thruout the whole wide world; and with this thought in view the following low prices have been determined on by the publishers:

One copy, 3 cts.; 3 of a kind, or assorted, 10 cts.; in lots of 100, at cost. Address Prof. T. W. Shannon, Delaware, Ohio.

BOOKS AND BULLETINS

EXPERIMENTS WITH SWEET CLOVER at the Ontario Agricultural College extend over a period of 25 years. The yield of hay per acre was not very different from that of alfalfa for the first year. If the crop is to be used for hay production it seems essential to cut it before any bloom appears. It was found that cattle refused the hay at first, and would have to be starved to make them develop the acquired taste for the bitter flavor of sweet clover. It was shown by a two-year experiment, also, that alsike, mammoth red, and common red clovers, all excelled sweet clover in affording pasturage. Such, in brief, is the verdict of the Ontario station. It does not sound as roseate as some of the reports in this country. Possibly the difference in soil would make the difference. The same report also states that some beemen in Canada had reported that they had found the flavor of the honey from sweet clover objectionable to the average customer; also that it was objectionable as winter stores. The article concludes by saying: "It would seem that on the whole the importance attached to sweet clover as a honey-plant by beekeepers

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Many people find it easier to make money than to keep it. For this reason the best plan is to open a Savings Account BY MAIL in this strong institution and deposit all surplus funds.

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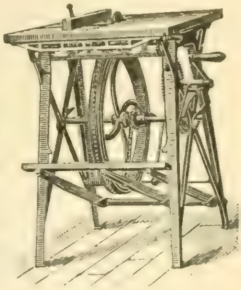


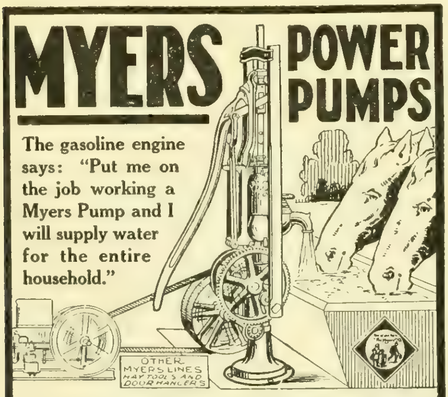
Books and Bulletins—Continued

in Ontario is much less than is generally supposed."

* * *

PUBLICATIONS PERTAINING TO BEEKEEPING. The following publications are no longer available in the Department of Agriculture, but may be obtained from the Superintendent of Documents at the prices indicated. Remittances should be made to the Superintendent of Documents, Government Printing Office, Washington, D. C., by postal money order, express order, or New York draft. If currency is sent, it will be at sender's risk. Postage stamps, defaced or worn coins, foreign coins and uncertified checks, will not be accepted. Here is the list: Ent. Bul. 55, Rearing of Queen-bees, 5 cents; Ent. Bul. 70, Report of Meeting of Inspectors of Apiaries, San Antonio, Texas, Nov. 12, 1906, 15 cents; Ent. Bul. 75, Part I, Production and Care of Extracted Honey, 5 cents; Ent. Bul. 75, Part II, Wax-moths and American Foul Brood, 5 cents; Ent. Bul. 75, Part III, Bee Diseases in Massachusetts, 5 cents; Ent. Bul. 75, Part IV, Relation of Etiology (Cause) of Bee Diseases to Treatment, 5 cents; Ent. Bul. 75, Part V, Brief Survey of Hawaiian Beekeeping, 15 cents; Ent. Bul. 75, Part VI, Status of Apiculture in

MYERS POWER PUMPS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25,000 MYERS POWER PUMPS sold last year indicates their popularity. You can make a choice from many styles and sizes—all shown in our catalog, Myers Pumps for Every Purpose. If interested, write. Our Service Department solves your pumping problems free—take advantage of it.

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Threshes cowpeas and soy beans from the mown vines, wheat, oats, rye, and barley. A perfect combination machine. Nothing like it. "The machine I have been looking for for 20 years," W. F. Massey. "It will meet every demand," H. A. Morgan, Director Tenn. Exp. Station. Booklet 102 free.

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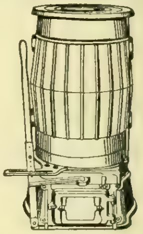

Heats bath and kitchen boiler too. ONE STOVE AND ONE FIRE YEAR ROUND. There is nothing like it. Send for booklet.

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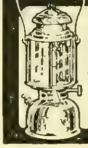

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. THE BEST LIGHT CO.
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DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent by express prepaid for $1.

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Eastern Beekeepers

This is the time you will need hives, sections, and foundation. Let us mail you our catalog giving prices on everything a beekeeper needs. We furnish full and nucleus colonies, bees by the pound, and queens.

A 3-fr. nucleus colony and Italian queen in a shipping-box, $5.10; tested Italian queens, $1.50; untested, $1.10.

Our location enables us to get goods to you promptly.

I. J. Stringham, 105 Park Pl., N. Y.
Home Apiary: Glen Cove, L. I.

Books and Bulletins—Continued

United States, 5 cents; Ent. Bul. 75, Part VII, Beekeeping in Massachusetts, 5 cents; Ent. Bul. 75, Parts I-VII, complete with Contents and Index, 30 cents; Ent. Bul. 98, Historical Notes on Causes of Bee Diseases, 10 cents; Ent. Bul. 121, Behavior of Honeybee in Pollen-collecting, 5 cents; Ent. Cir. 138, Occurrence of Bee Diseases in United States, 5 cents; Ent. Cir. 157, Cause of European Foul Brood, 5 cents; Ent. Cir. 161, Manipulation of Wax Scales of Honeybee, 5 cents; Ent. Cir. 169, Sacbrood, a Disease of Bees, 5 cents; Ent. Tech. Series 18, Anatomy of Honeybee, 20 cents; Dept. Bul. 92, Destruction of Germs of Infectious Bee Diseases by Heating, 5 cents; Dept. Bul. 93, Temperature of Honeybee Cluster in Winter, 5 cents; Dept. Bul. 96, Temperature of Bee Colony, 5 cents; Dept. Bul. 325, Honeybees: Wintering, Yields, Imports and Exports of Honey, 5 cents; Dept. Bul. 431, Sacbrood, 10 cents; Dept. Bul. 489, Survey of Beekeeping in North Carolina, 5 cents; Journal of Agricultural Research, Vol. VIII, No. 11, Spore-forming Bacteria of the Apiary, 15 cents; Chem. Bul. 154, Chemical Analysis and Composition of Imported Honey from Cuba, Mexico, and Haiti, 5 cents; Hawaii Agric. Exp. Sta. Bul. 17, Hawaiian Honeys, 5 cents; P. R. Agric. Exp. Sta. Bul. 15, Porto Rican Beekeeping, 5 cents.

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Northern-bred from my best *Superior Breeders;* in full colonies; for business; three-banded; gentle; hustlers; winter well; not inclined to swarm; roll honey in. Untested, 75c; 6 for $4.00; 12 for $7.50. Select untested, $1.00; 6 for $5.00; 12 for $9.50. Virgins, 1 to 3 days old, 50c each, at sender's risk. Safe arrival and satisfaction guaranteed in U. S. and Canada. Specialist of 20 years' experience.

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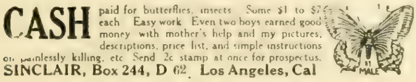
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Quirin's Improved Superior Italian Bees and Queens. They are Northern Bred and Hardy. . 25 Years a Queen-breeder.

PRICES	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested....	1 00	5.00	9.00	.75	4.00	7.00
Tested	1.50	8.00	15.00	1.00	5.00	9.00
Select tested .	2.00	10.00	18.00	1.50	8.00	15.00
2-comb nuclei	2.50	14 00	25.00	2.25	12 00	22.00
3-comb nuclei .	3.50	20.00	35.00	3.25	18.00	32.00
8-frame colonies ..	6.00	30 00		5.00	25 00	
10-frame colonies .	7 50	38.00		6.50	32.00	
1-2 lb pkg. bees ...	1.50	7.00		1.00	5.00	
1-lb. pkg. bees.....	2.00	10.00		1.50	8.00	

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders, $5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above price on bees by pound, nuclei, and colonies does not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Also nuclei and colonies, if wanted before June 1, add 25 per cent to price in table.

Breeders, select tested and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now.

Reference—any large supply dealer or any bank having Dunn's reference book.

H. G. Quirin, Bellevue, Ohio

Queens from Dr. C. C. Miller's Best Breeders

We have made arrangements with Dr. C. C. Miller to keep us supplied with some of his best breeders, and are rearing queens from these superior mothers that we guarantee to be as good as can be reared. These queens are not just individuals that have made a good yield; we all have some colonies that made a good showing, but all do not have a strain that holds the world's record as his does. Think of it—a whole yard of 72 colonies averaging 266 sections weighing 244 pounds. You are getting at a low price the results of fifty years of careful breeding of one of the most successful beekeepers in the world. Safe arrival and entire satisfaction guaranteed on all goods sold.

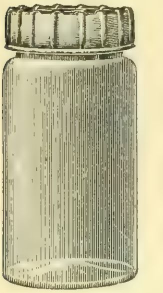
One untested Miller queen, $1.00, $11.00 per dozen. Tested, $2.00. Ex. Select Tested, $3.50. Breeders, $5.00 to $10.00 each.

One pound bees, $1.25; ten or more, $1.00 per pound. Two pounds, $2.25; ten or more, $2.00 each. One frame nuclei, $1.25; two frame, $2.25; three frame, $3.25. Add price of queen wanted. Full colonies a specialty.

The Stover Apiaries
Starkville, Miss.

Glass Jars at Special Prices to Close Out Stock

FEDERAL OR SIMPLEX JAR, 1-LB., IN CASES OF 2 DOZ. EACH.



At Medina, 45 cases, 2 doz. each, at $1.10; 6 for $6.30; $1.00 per case for lot.

At Washington, D. C., 3 bbls. of 12 doz. each, at $5.25 each; $15.00 for lot. 2 crates of 12 doz. each, $5.25 each; $10.00 for lot.

At Mechanic Falls, Me., 26 cases of 2 doz. each, at $1.10; 6 for $6.30; $1.00 per case for lot.

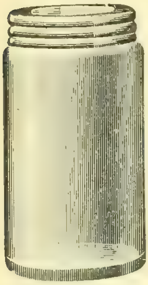
At St. Paul, 2 cases of 2 doz. each, at $1.10; $2.00 for lot.

At Chicago, 65 cases of 2 doz. each, at $1.10; 6 for $6.30; 30 or more at $1.00.

At Philadelphia, 37 cases of 2 doz. each, at $1.10; 6 for $6.30; $1.00 per case for lot.

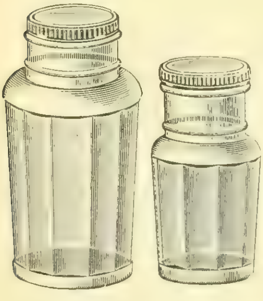
At New York, 18 cases of 2 doz. each, at $1.10 per case; $1.00 per case for lot.

ONE-POUND ROUND JAR IN PAPER RESHIPPING CANS OF 2 DOZ. EACH.



This is the only jar we have retained in our catalog this season. We are provided with a carload of stock at Chicago, another car at St. Paul, several hundred cases at Des Moines, Iowa. We have over a thousand cases at Medina, a few hundred each at Philadelphia, New York, and Mechanic Falls, Me. This stock, while it lasts, will be sold at $1.10 per case; 6 cases, $6.30; 100-case lots at $1.00 a case. New stock cannot be obtained for months after orders are placed, and prices will be much higher. Get your supply while there is stock available. In the same style of jar, 15-oz. capacity, we have at Mechanic Falls, Me., 300 cases, which we offer at the same price.

TAPER PANEL JARS IN TWO SIZES, 1 AND ½ LB., PACKED IN CASES OF 2 DOZ. EACH.



At Medina, 7 cases, 2 doz. each, ½-lb., 90 cts. per case; $6.00 for lot.

At Washington, D. C., 19 cases, 2 doz. each, ½-lb., 90c per case; 85c lots of 6 or over; 28 cases, 2 doz. each, 1-lb., $1.10 per case; $6.30 for 6; $1.00 case for lot.

At Mechanic Falls, Me., 21 cases, 2 doz. each, 1-lb., $1.10 per case; $6.30 for 6; $1.00 case for lot.

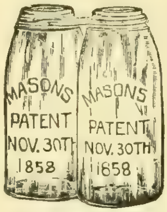
At St. Paul, 23 cases, 2 doz. each, ½-lb., 95 cts. case; $20.00 for lot.

At Chicago, 30 cases, 2 doz. each, 1-lb., $1.10 per case; $6.30 for 6; $1.00 case for lot; 10 cases, 2 doz. each, ½-lb., 90 cts. per case; $8.50 for lot; 3½ gross in crates of octagon jars holding about 1 pound, very similar to the 1-lb. taper-panel, only straight, offered at $3.50 per gross; $10.00 for lot.

At Philadelphia, 28 cases, 2 doz. each, 1-lb., at $1.10 or $6.30 for 6; $1.00 case for lot; 84 cases, 2 doz. each, ½-lb., at 90c per case, or 85c in lots of 6.

At New York, 21 cases, 2 doz. each, 1-lb., at $1.10 per case; 42 cases, 2 doz. each, ½-lb., at 90 cts. per case.

MASON FRUIT-JARS IN THREE SIZES, PUT UP 1 DOZ. IN A CASE.



At Medina, 123 doz. 1-pint jars, 50 cts. a doz.; $5.70 for 12 doz.

At Medina, 136 doz. 1-quart jars, 55 cts. doz.; $6.00 for 12 doz.

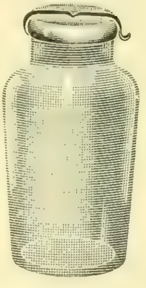
At Medina, 42 doz. 2-quart jars, 85 cts. a doz.; $9.00 for 12 doz.

At Mechanic Falls, Me., 10 doz. 1- pint jars, 50 cts. a doz.; $4.75 for lot; 59 doz. 1-quart jars, 55 cts. a doz.; $6.00 for 12 doz; 13 doz. 2-quart jars, 85 cts. a doz.; $9.00 for 12 doz.

At Philadelphia, 20 cases of 1 doz. each, 1-pint Premium jars, at 65 cts. per doz.; $12.00 for lot; 7 cases of 1 doz. each, ½-gal. Premium jars, at $1.10 per doz.; $7.00 for lot.

At New York, 20 cases, 1 doz. each, pint Mason, at 50 cts. doz.; 8 cases, 1 doz. each, pint Premium, 65 cts. per case; $4.80 for lot.

TIPTOP JARS WITH GLASS TOP, RUBBER RING, AND SPRING TOP FASTENER.



At Medina, 8 crates, 1 gross each, 1-lb., at $5.50 per crate; 27 cases, 2 doz. each, ½-lb., at $1.00 per case; lot at 90 cts.

At Washington, D. C., 8 cases, 2 doz. each, ½-lb., at $1.00 per case; lot at 90 cts.; 11 cases, 2 doz. each, 1-lb., at $1.10 per case; lot at $1.00. 3 crates, 1 gross each, ½-lb., at $5.00 per crate; $14.00 for lot.

At St. Paul, 6 cases, 2 doz. each, 1-lb., $1.10 per case; $6.00 for lot.

At Chicago, 25 cases, 2 doz. each, 1-lb., $1.10 per case; $25.00 for lot.

At Philadelphia, 7 crates, 1 gross each, 1-lb., at $5.50 per crate; 287 cases, 2 doz. each, 1-lb., at $1.10 per case; lot at $1.00 per case; 4 crates, one gross each, ½-lb., at $5.00 per crate; $19.00 for lot; 10 cases, 2 doz. each, ½-lb., at $1.00 per case; lot at $9.50.

At New York, 39 cases, 2 doz. each, 1-lb. tip top, at $1.10 per case; 10 cases, 2 doz. each, ½-lb. tiptop, at $1.00 case; 10 crates, 12 doz. each, 1-lb. tiptop at $5.50 per crate; 4 crates, 12 doz. each, ½-lb. tiptop, at $5.00 per crate.

SQUARE JARS WITH CORKS IN VARIOUS SIZES.

At Medina, 8 cases, 1 gross each, ½-lb., with cork, $3.75 per case. 22 cases, 2 doz. each, 1-lb., spring top, $1.10 per case. 2 cases, 6 doz. each, 2-lb., with cork, $3.75 per case. 21 cases, 2 doz. each, ¼-lb., with aluminum screw cap, 75 cts. per case, 70 cts. per case for lot.

At Washington, D. C., 2 gross 1-lb. sq. jars with cork, $5.00 per gross. 1 gross 2-lb. sq. jars with cork, $7.50 per gross.

At St. Paul, 18 cases, 1-lb. sq. jars with cork, $1.10 per case, $18.00 for lot. 3 cases, ¼-lb. sq. jars with cork, 75 cts. per case, $2.00 for lot. 1 case, ½-lb. sq. jars with cork, 90 cts. per case. 1 case, 2-lb. sq. jars with cork, $1.50 per case. 1 case, ½-lb. round Hershiser jar with aluminum cap, $1.00. 1 case, 1-lb. round Hershiser jar with aluminum cap, $1.20.

At Chicago, 6 cases, ¼-lb. sq. Hershiser jar with aluminum cap, 70 cts. case. 8 cases, 1-lb. sq. Hershiser jar with aluminum cap, $1.20 case. 2 gross, ¼-lb. sq. Hershiser jar with aluminum cap, $3.75 gross, $7.00 for lot. 1 gross, 1-lb. sq. Hershiser jar with aluminum cap, $6.00.

At Philadelphia, 8 crates, ½ gross each, 2-lb. square jars, at $3.75 per crate or $7.50 per gross.

At New York, 17 cases, 2 doz. each, ½-lb. square with cork, at 90 cts. per case; 2 cases, 2 doz. each, 2-lb. square, at $1.50 case; 14 cases, 6 doz. each, 2-lb. square, $3.75 per case; $7.50 per gross.

Send orders to Medina for stock listed as being at Medina or to the branch where stock is listed.

The A. I. Root Company, Medina, Ohio

QUEENS

For Sale

Red-clover 3-band Italian queens; Root's, Moore's, Davis,' extra-select stock, mated with Geo. H. Hows' famous select drones. I know none better for honey-gathering, wintering, beauty, etc. I guarantee 90 per cent pure mated if queens are returned to me. Queens or money back in a reasonable time. No foul brood, no bee disease; apiaries inspected by Mr. Rea and Prof. Franklin Sherman, Jr. Mr. Rea is our bee inspector of this state.

	Price before July			After July 1st		
	1	6	12	1	6	12
Untested queen .	.75	4.00	8.00	.75	3.25	6.50
Select untested. .	.80	4.50	8.50	.80	3.75	7.00
Tested	1.25	6.00	10.00	1.25	5.00	9.00
Select tested	1.50	8.00	13.00	1.50	6.00	10.00
Extra select tested	2.00	10.00	15.00	2.00	8.00	13.00
½ lb. bees with qn	2.00	10.00	16.00	1.75	8.00	14.00
1 lb. bees with qn	2.50	12.00	20.00	2.00	10.00	17.00

I can furnish bees in lots of 25, 50, and 100 pounds. I am in position to give prompt service this season. My bees are of a famous foul-brood-resisting strain.

H. B. Murray . . Liberty, N. C.

Queens of MOORE'S STRAIN of Italians

PRODUCE WORKERS
That fill the super quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.
Untested queens, $1.00; six, $5.00; 12, $9.00.
Select untested, $1.25; six, $6.00; 12, $11.00.
Safe arrival and satisfaction guaranteed.
Circular free.

Queen-breeder
J. P. MOORE,
Route 1, MORGAN, KY.

Queens of Quality

Select, three-banded, leather-color Italians—bred for honey production. . .
Untested queens, 75c each; 6, $4.25; 12, $8.00. . . Descriptive circular free.

J. I. Banks, Dowelltown, Tennessee

Rhode Island Northern-bred Italian
Queens, $1.00. Circular.
O. E. TULIP, ARLINGTON, RHODE ISLAND

QUEENS Select Italians; bees by the pound; nuclei. 1917 prices on request. Write
J. B. Hollopeter . . Rockton, Pennsylvania

SWARMING CONTROLLED . . . .
If interested, address Charles Thompson, Marion, Iowa, for information.

AROUND THE OFFICE

M.-A.-O.

There is a good deal sometimes in knowing something that isn't so. What leads me to this sagacious observation is the fact that Mr. A. I. Root and I are quite generally regarded as making a perfect 100 per cent garden team—he knows all about it and I know nothing—just zero. Add 'em together, tho, and that makes 100 per cent, doesn't it? But allthesamee he has just recently taught me something about gardening that puts me in an unshakable position to say that I know something that *isn't* so about gardening, anyway. I tried to use this newly acquired education the other day, and now I and my poor little babies have got to go without cucumbers and watermelons this summer and without Hubbard squash all next winter. You see it was this way: "Uncle Amos" and I had been conspiring in cahoots this spring and early summer against the certain oncoming ravages of the squash bug—that little yellow and black-striped limb of Satan. Oh, he's the meanest little puke of a garden bug on the whole footstool! You know him. Well, we had discussed tobacco dust and wood ashes and Killembug's slugshot, and flour, and arsenate of lead, and mosquito netting, etseterra, etseterra, etc. In due time, our squash and melon vines hove in sight—and so did the squash bug. In fact, he was waiting when they hove. He also had his coat and vest off, his sleeves rolled up, and his teeth manicured when the first trusting little squash vines poked the tip of themselves out into this cruel world. He took the tips off and then sank shafts for the roots. He also got'em, too—all the first ones, before "Uncle Amos" and I got onto him and got-a-goin'. Of course, we were madder than the devil ("Uncle Amos" didn't say that—get solid on that point, for I'll get hauled up on it and can say I explained it wasn't he that said it). As I was saying, we were madder than the devil ("Uncle Amos" didn't say it, remember), and we began using thumb-and-forefinger pincers on them, tobacco dust, poison and choke stuff alot. The dingdanged squash bug wasn't the only pebble in our gardens when "Uncle Amos" and I finally got into full action, and he needn't think he was—nosiree. He was getting most of the squash vines, but we were getting a few of him and some revenge, occasionally, too. He didn't always escape even if he did drop off the edge of the leaf on sight at 40 rods—not if we had got him filled up and dizzy with a half dozen kinds of poison, he didn't

Baby Nucleus

This youngster has always eaten lots of honey. Let us produce so much honey that all babies can have it. To produce big crops you must have young vigorous queens. We raise that kind. Send for our booklet dsecriptive of our gentle, high-grade **Italian Queens.** $1.00 each; $9.00 per dozen.

JAY SMITH,
1159 De Wolf St. Vincennes, Indiana.

Mott's Northern-bred Italian Queens

are hardy, prolific, gentle, and hustlers, therefore resist well disease.
Untested, 75c each; $8.00 for 12.
Sel. Tested, $1.50 each.
Virgins, 50c each; or three for $1.00.
Bees by pound.
Plans "How to Introduce Queens," and "Increase," 25c. List free.

E. E. MOTT, Glenwood, Mich.

Beginner's Book of 28 Pages, Free
Also our 44-page Bee-supply Catalog for 1917 is ready for mailing. Ask for your copy now.
OUR PRICES ON BEES AND QUEENS: 1 lb. of bees with queen, $2.25; 10 lbs., $20.50; 100 lbs., $190.00; 1 frame with queen, $2.00; full colonies, one-story hive included, $8.75; untested queens, 75c each. Our complete price list free, and safe delivery guaranteed.
The Deroy Taylor Company, Newark, N. Y.

PATENTS Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.
Chas. J. Williamson, McLachlan Building
WASHINGTON, D. C.

Around the Office—Continued

Other times, he 'most always did, for that striped bug gets wilder than a hawk and smarter 'n a fox after you have hunted him about three times. You don't more than have to come around the corner of the barn and he parachutes off the squash leaf and just ain't anywhere any more when you get there. He's the most disappearing little cuss — now-you-see-him-and-now-you-don't —that I've ever seen. Get within shouting distance of him, and he'll fly. Did you ever see where he lit without contracting eye strain? You have not. But why go on in this polite way, when you can use only Root parlor language about this orneriest, provokingest, dingdanged meanest bug that roams the garden? No use. It doesn't satisfy. But I tell it to him (the bug) to his face right when I get him between my thumb and forefinger first joint. Oh, I do tell him! But—I am losing the thread of this argument. I was saying that "Uncle Amos" and I were using dusts, poisons, and fingers and thumbs on this miscreant—his bugship getting most of the vines and we getting all the work and most of the anguish of spirit. Things were running along this way, with the bugs generally having a majority, when early one morning a few days ago "Uncle Amos," all aglow, entered the palatial journalistic parlors where I toil from early morn till dewy eve for kopeks and grub, and said that he had got it now for sure. I didn't know just what he had got, for he might have had 'most anything from the way he acted, so I asked him. He had a sure cure for squash bugs—catch'em, pinch'em into the great beyond, and place their still quivering mortal remains prominently on a leaf, about one erstwhile squash-bug to a leaf. The deceased bug was just to lie up there conspicuously dead and scare the liver, lights, and lungs out of every live bug that came in sight. Well, everybody shook hands, the office cat began purring as of old, and it seemed a cheerful world again. I hastened home that noon and evening, neglected my family and every other duty, and dove for the garden. Once there, I ran walked, scooched down, crawled, dug, came up from behind on 'em, advanced on the flank and right obliqued on the port side of 'em, balanced, forwarded and backed—and altogether mighty nearly put the final binger on myself getting 17 bugs—about one bug cadaver for every 12 squash leaves that the bugs had left intact. But I put squashed squash bugs on the most conspicuous leaves and then I went to the house, enjoying to the full a sense of duty done and victory won. I told my wife so. I played with the

Around the Office—Continued

children. I was awful nice to everybody that evening. Chested up considerably and told one of my neighbors who chanced to drop in that I didn't have to go to the garden to hunt bugs any more—I had 'em frazzled. And I just didn't go for about three days. I put in the time telling about the victory. Then about the third morning I went. As I rounded the corner of the old barn the whirr of wings sounded like a covey of partridges going out of a beechnut grove. My! but they had got fat—and equally populatious. I guess they had. Yet they didn't fill the garden so full but that I could squeeze in and see that all that was left of the squashvines looked like the filagree work of a 25-cent "guaranteed gold" breast-pin bought at a county fair. Now, that's about all there is to this story, except that I have grown cool and suspicious, and even haughtv toward "Uncle Amos" as a bug exterminator. As I said in the first place: There is a good deal sometimes in knowing something that isn't so—especially if you try it on.

* * *

Blessings on the few true men of America who have written to the Editors interceding for the Man-Around-the-Office lest he be removed on out thru the back cover

Bees and Queens

Full Colonies, Nuclei and Pound Packages

We have about the finest lot of bees we ever had before in our history. We have now the Wardell strain, which has been moved to Medina, and we also have our celebrated Pritchard strain, both of which have so far shown themselves to be practically immune to European foul brood. Our yard has been carefully inspected by the State Inspector and we are prepared now to furnish queens and bees in pound lots, nuclei or full colonies.

We are also to furnish our fine strain of queens, Italians that are bred for business as well as immunity to European foul brood.

Untested Italian Queens, each..	$1.00
3 Untested Italian Queens, for...	5.00
6 Untested Italian Queens, for...	5.00
12 Untested Italian Queens, for...	9.00
25 Untested Italian Queens, each..	.70
50 Untested Italian Queens, each..	.67½
100 Untested Italian Queens, each..	.65
Select untested, each...........	$1.25
Tested, each	2.00
Select tested, each.............	3.00
Home-bred virgin	.50

Breeding queens from $5.00 to $25.00

We are now able to make prompt shipments from Medina, in most cases by return express. Remember that we are the pioneers in the combless packages of bees and our guarantee is very broad and liberal.

The A. I. Root Co., Medina, O.

Queens Hardy, Long-lived, and Disease-resisting Queens

20 YEARS OF SELECT BREEDING GIVES US QUEENS OF HIGHEST QUALITY
QUEENS FOR HONEY PRODUCTION—QUEENS OF UNUSUAL VITALITY

"There are few queens their equal and none better"

What Bees Do Headed By Our Queens

"One swarm made 185 sections of honey and another 296 sections. I am well pleased."
Kimmell, Ind. MELVIN WYSONG.

"Your bees averaged 150 lbs. of surplus honey each. I find them not only hustlers but also gentle."
Meredosia, Ill. FRED H. MAY.

"I have tried queens from several different places and like yours best of all."
Alabama, N. Y. C. O. BOARD.

"We are only one mile from Lake Erie, and exposed to high cold winds; in fact, this is the windiest place along the Great Lakes. Your bees were able to stand the winter with only an insignificant loss, and we would have no others. As for honey they averaged 175 pounds of extracted surplus, did not swarm, and gave an artificial increase of 30 per cent, which is as fine a record as can be had in this locality, especially when the work is done entirely by amateurs."
Name furnished on request, North East, Pa.

Price List of Golden and 3-Band Italian Queens by Return Mail.

Untested	50 cts. each,	$45.00 per 100	Tested	$1.00 each,	$ 90.00 per 100
Select untested ..	65 cts. each,	$50.00 per 100	Select tested......	$1.25 each,	$110.00 per 100

We Guarantee Our Queens to Arrive Safely, That They are Very Resistant to European Foul Brood, and, in Fact, to Give Full and Complete Satisfaction.
Wings clipped free of charge.
Our Capacity is 1500 Queens Monthly.

M. C. BERRY & COMPANY, Hayneville, Alabama, U. S. A.

Around the Office—Continued

page of GLEANINGS forevermore—'raus mit im. J. E. Crane, by his charitable reference in July GLEANINGS, has won a place in my affections for quite awhile to come. Anyway, I've recently decided not to be fired, editors or no editors, and to stick back here in these back pages like a puppy to a root.

* * *

Now that that plaguey, heart-breaking, all-winter-and-half-the-summer experiment of trying to mate queens in a big greenhouse is ended, I want to tell you readers that we are a chop-fallen crowd. We thought we were going to be smarter than anybody—and we slipped up. That's just it—we slipped up. Of course, we didn't claim anything in advance nor toot our horns previously, but we had 'em all ready to toot loud, I'll tell you that, and it was sort of humiliatin' to have to put 'em away without a chance for even one single toot. How like thunder and blazes we hated to come right out in GLEANINGS, too, and say we had foozled. Gosh! how we *did* hate that! It almost prostrated me and the Root crowd, and it completely subdued Mel Pritchard, our queen-rearer. He has got an awful low opinion of drones right now. Says they just bumped their old fool heads against the iron beams of that green house till their heads ached so that they didn't know a virgin queen from an airship.

* * *

The American Bee Journal editors in their July issue say: "The production of honey from dandelions has always been an unknown quantity to us here," but "this year, for the first time, we can report that our own bees gathered honey from dandelions," etc. I suppose it's sort of mean in me, but I just wish that while dandelion honey was yet an "unknown quantity" to them they had put a dandelion picture on their first cover page and in an article on the inside flashed the information on the beekeeping world that "the dandelion produces little or no honey." Seems to me I've read somewhere that misery gets along better with company. Gosh! I do wish they had got their foot into it too!—and they "might of," for all I can see.

* * *

Here's another good use to which to put honey. A beekeeper living at Brownstown, Ind., writes: "From 23 colonies of bees we have sold enough honey to send our oldest boy to college." If that boy will be as industrious at college as are the bees back home that are paying his board, room and tuition he will get something out of college more than football, cigarets and a class yell.

By Return Mail
Choice
Italian Queens

Each . . . $ .75 Six $4.25
Twelve . . 8.00 Twenty-five 15.00

J. B. Hollopeter, Rockton, Pa.

Increase Your Honey Crop

by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested each, $1; 6, $5. Tested, each $1.25; 6, $5.50. Breeders, $5.

FRED LEININGER & SON, Delphos, Ohio

SOUTHERN BEEKEEPERS
Get the Famous Root Goods Here

Veils, 65c; Smoker, 90c; Gloves, 65c pair; wire-imbedder, 35c; honey-knife, 80c; 1-lb. spool wire, 35c; medium-brood foundation, 1 to 11 lbs. 58c per lb.; 11 to 25 lbs., 56c; 50 or 100 lb. lots, 53c. Ten-fr. wood-zinc excluders, 50c each; Hoffman frames, $3.75 per 100. Honey-extractors for sale. I am paying 28c cash, 29c trade, for wax.

J. F. Archdekin, Bordlonville, Louisiana.

Queens . . Queens

From a strain of Itallians, wintered for thirty years in the foothills of the Adirondack Mountains out of doors. Hardy, gentle, industrious, and fine resisters of disease. $1.00 each, or $9.00 per dozen; also nuclei and full colonies.

Charles Stewart, Box 42, Johnstown, N. Y.

When Ordering Supplies

remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk. Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager.

BEE SUPPLIES Send your name for new catalog.
Dept. T, CLEMONS BEE SUPPLY CO.,
128 Grand Avenue, Kansas City, Mo.

LEPAGE'S
GLUE HANDY BOTTLES
FOR EMERGENCIES 10¢

QUEENS

Our July, August, and September SPECIAL PRICE on untested leather-colored and Golden queens---a bargain never offered to the American beekeeper before.

Prices on	1 to 10	queens, 60 cts. each
"	11 to 25	queens, 55 cts. each
"	26 to 100	queens, 50 cts. each
"	100 to 1000	queens, 48 cts. each

Safe delivery. If not satisfied, return queens, and get your money back. The Root Company, The American Bee Journal, Dadant & Sons, any mercantile agency, and others will tell you who we are.

The Penn Company . . Penn, Miss.

Friction-top Cans and Pails

We can now furnish friction-top cans and pails at the following prices f.o.b. Chicago, Keokuk, Iowa, or Hamilton, Illinois: : :

2-lb. cans in crates of 612—per crate	$26.75
2½-lb. cans in crates of 450—per crate	22.50
2½-lb. cans in cases of 12—per case	1.40
5-lb. pails in crates of 200—per crate	16.00
5-lb. pails in crates of 100—per case	8.25
5-lb. pails in crates of 100—per crate	8.25
10-lb. pails in crates of 100—per crate	12.50
10-lb. pails in cases of 6—per case	.95

The above prices are low considering the present price of tin-plate. Send in your orders at once.

Dadant & Sons, Hamilton, Illinois

Queens . Queens . Queens

We are making a specialty of untested queens, and are prepared to send either large or small quantities out promptly, generally by return mail. Every queen guaranteed to be entirely satisfactory. Goldens after June 15th at the same price. We spare neither labor nor money in producing the best queens. Quality counts the most with us.

One queen, 75c; 12, $8.00; 25 to 1000, 60c each. After July 15, one, 55c; 12, 50c; 25, 45c. One pound bees, $1.25; 10 or more, $1.00 per pound. Two pounds, $2.25; 10 or more, $2.00 each. One frame nuclei, $1.25; two frame, $2.25; three frame, $3.25. Add price of queen wanted. Full colonies a specialty.

The Stover Apiaries, Starkville, Mississippi

After June 20 address will be Mayhew, Miss.

QUEENS OF QUALITY

Capacity of Yard over 1000 Queens a Month

After 20 years of careful selecting and breeding I now have a strain of bees that cannot be excelled by any. . . . My queens are all bred from IMPORTED STOCK, the very best in the world for honey-gathering and gentleness. They are not given to swarming. What more do you want in bees than the three above qualities?

	1	6	12		1	6	12
Untested	$.50			Tested	$1.25	$7.00	$13.00
Select untested..	.75	4.25	8.00	Select tested ...	2.00	11.00	20.00

GUARANTEE.—You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition, to be purely mated, and to give perfect satisfaction. All queens that do not give satisfaction I will replace or return your money. Send for circular.

L. L. Forehand, Ft. Deposit, Alabama

LOCKHART'S SILVER-GRAY CARNIOLANS

"LINE BRED" for the past 31 years. They are VERY hardy, gentle, prolific, great workers, and builders of VERY WHITE combs, and use mostly wax in place of propolis. Untested queen, $1.00; six for $5.00; dozen for $9.00. Select untested queen, $1.25; six for $6.00; dozen for $11 00. Tested queen, $2.00; six for $9.00; dozen for $15.00. Select tested, $3.00. Best breeder, $5 00. Extra select, very best we have, $10.00. Safe arrival guaranteed in United States and Canada. No foul brood here.

F. A. LOCKHART & COMPANY . . . . LAKE GEORGE, NEW YORK

QUEENS... Select Three-banded Italian or Leather-color. . . .

Queens' wings clipped free of charge.
Safe arrival guaranteed.

Untested . .	one, $ .75	twelve, $ 8.00
Select untested . .	" .90	" 9.00
Select tested . .	" 1.50	" 15.00
Extra select breeder	" 5.00	

H. N. Major, South Wales, New York

Shipping-cases for Comb Honey

We are prepared to make prompt shipments. We want you on our mailing list. Send for our catalog.

August Lotz Company, Boyd, Wisconsin

Forehand's Queens . . . Get a good Queen

One that will keep the hive chock full of bees at all times, make the biggest yields of honey, sting less, and look the prettiest, at a medium price.

Over 25 years of select breeding has brought our queens up to a standard surpassed by none, and the superior of many. We have tried the principal races and every method known, and now we have selected the best race and method—the THREE-BAND BEES and the DOOLITTLE METHOD. We USE THE 3-BANDS —Why? Because they get results.

Dr. Miller, Roots, and Dadants use them.

Our queens are sold by many of the largest dealers in the U. S.

Louis H. Scholl (one of the largest beekeepers of the Southwest) says, "Three-band Italians have proven the best all-around-purpose bee after trying out nearly every race—not only in an experimental way while still at A. M. Col., but in our own apiaries as well." (In Beekeeper's Item.)

Untested	One,	$ .50	Six,	$3.00	Twelve,	$ 6.00
Select untested	One,	.75	Six,	4.75	Twelve,	8.00
Tested	One,	1.50	Six,	8.75	Twelve,	17.00

Write for price on larger quantities.

Send for circular giving general description. Mail all orders to

W. J. FOREHAND & SONS, Fort Deposit, Alabama

Full Values in

"Falcon" Beekeepers' Supplies

For the last forty odd years during our manufacture of "FALCON" supplies it has been our endeavor to place upon the market the very best possible line of supplies, and we pride ourselves in having accomplished this. "FALCON" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "FALCON" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "FALCON" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

Red Catalog, postpaid Dealers Everywhere "Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from.

Queens See our May Ad. Queens

THREE-BANDED ITALIANS THE BEST. They are hustlers, gentle to handle, cap their honey white, are very resistant to European foul brood. Some call them Long-tongue Red-clover Queens. Satisfaction and safe arrival guaranteed.

	1	6	12	50	100
Untested queens, June to November	$ .80	$4.40	$ 8.00	$30.40	$ 60.00
Tested queens, June to November	1.00	5.20	9.60	36.00	70.00
Select tested queens, June and November	1.60	8.00	14.00	52.00	100.00

Let us know your wants. Circular free.

Nueces Valley Apiaries . . . . . Calallen, Nueces Co., Texas

QUALITY BLANKE MARK

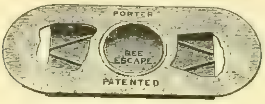
Blanke's BEE BOOK

This book describes our line of bee supplies. It contains much information valuable to the beekeeper.

We are centrally located. Shipments out of St. Louis will reach you promptly, and our long experience in this line enables us to fill your orders accurately. . . .
Write for Blanke's Bee Book—it's FREE.

BLANKE MFG. & SUPPLY CO.
214-216-218 Washington Avenue, St. Louis, Missouri

PORTER BEE-ESCAPE
Saves Honey, Time, Money



For Sale by All Dealers

THE A. I. ROOT CO., Medina, Ohio
General Agents for the United States

R. & E. C. PORTER, Manufacturers
Lewistown, Ills., U. S. A.

ALWAYS ON TOP

Established 1885

It will pay you to get our 50-page catalog and order early.

Beekeepers' Supplies

The Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

AT BOSTON

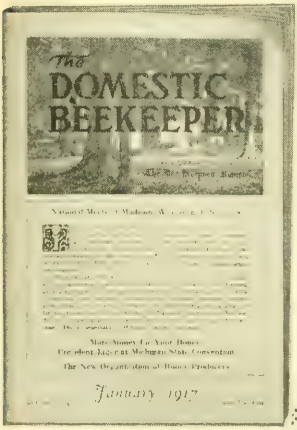
New England beekeepers will find everything in the way of supplies they will need the coming season. Place your orders early and avoid the rush. Send for catalog.

H. H. JEPSON, 182 Friend St.

New England Beekeepers

Every Thing in Supplies
New Goods Factory Prices Save Freight

Cull & Williams Co., Providence, R. I.



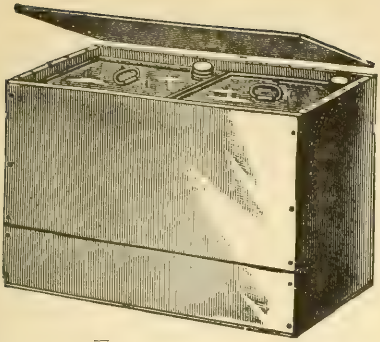
A SPECIAL INTRODUCTIONAL OFFER.

THE DOMESTIC BEEKEEPER
For Six Months for Only 25 Cents

The Domestic Beekeeper (successor to the Beekeepers' Review) is now a 48-page magazine with cover, much larger and better every way than the old Review. . . .

We want you to see for yourself what a large and interesting journal the **Domestic Beekeeper** is and are offering you this special price for a trial subscription for six months. Just wrap 25c in one or two cent stamps in a paper and mail it to

The Domestic Beekeeper . Northstar, Mich.



Get Cans
While You Can

We have in stock today five carloads of 60-pound tin cans and two carloads of friction-top pails, chiefly five and ten pound. We can ship these at once as ordered.

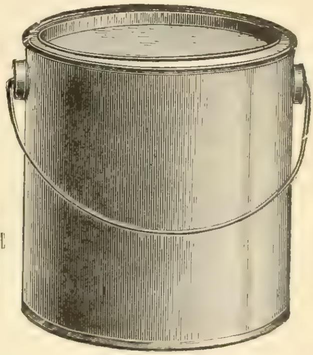
We Don't Know---

that we can secure any more cans and pails of the manufacturers. We may be able to and we may not. So we advise our patrons to cover their wants now.

Until further notice we offer the 60-lb. cans at the following prices: Cans only, without boxes, tied nine in a bundle, at $3.60 (weight, 24 lbs.); 50 in a crate, $20.00 (weight, 190 lbs.); two in a box at $1.25, or 10 boxes, $12.00; 50 boxes or more, at $1.10.

We offer five-pound pails, per box of 12, $1.30 per box; $17.00 per crate of 200; per case of 50, $4.50. Ten-pound pails, per box of 6, $1.10 per box; $13.00 per crate of 100; per case of 50, $6.75.

The A. I. Root Co.
Medina, Ohio



WE NEED HONEY

Our local sales of honey have increased greatly in the last year or two, and we need much more extracted honey than we can produce for our trade. Before selling your honey let us have a chance to make a price on what you have to dispose of. Send us a sample; tell us the amount you have and how put up, and we will tell you what we can offer spot cash for it.

Save Your Combs and Cappings

and send them to us. Our high-pressure outfits and special equipment will get out all the available wax. The extra wax we get usually more than pays for rendering charges.

For your share of wax we will either pay you the highest cash price or work it for you into

Dadant's Foundation

If your bees are not already acquainted with DADANT'S FOUNDATION you should give them a chance to test it. Their action will be more convincing than our words, "Best by Test."

One prominent state inspector in the east wrote us in June:

"Dadant's Foundation is Perfect."

It represents our best efforts. Satisfaction guaranteed, and prompt returns as soon as shipments reach us. Write today for shipping tags and beeswax prices.

Dadant & Sons, Hamilton, Illinois

[illegible] Library,
[illegible] Agl. College,

Gleanings in Bee Culture

"Sunshine of the Golden Rod"

Vol. XLV September, 1917 No. 9

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you SPOT CASH for any thing you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

Immediate Shipments: Telegraph Us.

Superior Foundation

(Weed Process). Special prices on quantity lots.

Honey-cans

We are fortunate in securing several carloads. Try us for prompt service.

Old Combs

We render on shares. Our steam process removes every ounce of beeswax.

Honey Sections, Extractors

Etc. Every thing in bee supplies.

Superior Honey Company, Ogden, Utah

Southern Headquarters for Three-banded Italian Queens

To supply the increasing demand for our queens we are now running nearly twice as many mating boxes as last year, and six times as many as six years ago. We spare neither labor nor money to produce the very best that can be had. We are careful about our breeders for producing our queens and drones. We use the best methods to produce the best queens.

Untested queens .... August and later, $ .55; 12, $ 6.00; 100, $ 48.00
Tested queens .... August and later, 1.00; 12, 10.75
Select tested queens .... August and later, 1.65; 12, 18.00; 100, 180.00
Very best queens for breeders, $3.00 each.

If any of our untested queens prove to be mismated we are willing to replace them free of charge. No foul brood has ever been in our vicinity. Safe arrival and satisfaction I guarantee.

W. D. Achord, Fitzpatrick, Alabama

CONTENTS

SEPTEMBER 1917

Editorial 669-672
Lessons of Fifty Years 673
The Hives I Use and Why 676
Conversations with Doolittle ....G. M. Doolittle 679
Letters from a Beekeeper's Wife ....''Mary'' 680
Paralysis or Isle of Wight Disease ....Iona Fowls 681
Do Bees Rob? ....P. C. Chadwick 682
San Domingo Beekeeping ....Geo Pou 682
The Evil That Men Do ....John Preston True 684
Just Jerk 'Em Off ....Louis Biediger 685
Tapping a Bee-tree in Australia ....B. Blackbourn 686
Is Honey a Luxury? ....James A. Brown 686
An Ideal Location ....M. L. Skougard 688
Hives and Methods for the South ....L. E. Webb 689
Siftings ....J. E. Crane 691
Stray Straws ....Dr. C. C. Miller 692
Our Food Page ....Stancy Puerden 694
Beekeeping as a Side Line ....Grace Allen 696
To Mr. John M. Davis ....Grace Allen 697
Beginners' Lessons ....H. H. Root 698
Gleanings from North, South, East, and West ....Dept. Editors 700
Gleaned by Asking ....E. R. Root 708
Mother Bee Nursery Rhymes ....M. G. P. 712
Heads of Grain from Different Fields 713
Just News ....The Editors 717
Our Homes, Health Notes ....A. I. Root 720-727
Man Around the Office ....M. A. O. adv. pages

SUBSCRIPTION RATES.—One year, $1.00; two years, $1.50; three years, $2.00; five years, $3.00. Canadian subscription, 30 cents additional per year, and foreign subscription, 60 cents additional. **DISCONTINUANCES.**—On and after March 1, 1917, all subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name that appears on the paper. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order or check. **CONTRIBUTIONS** to GLEANINGS columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' RELIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

(Entered as second-class mail matter at the Postoffice at Medina, Ohio.)

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

Editorial Staff

E. R. ROOT	A. I. ROOT	H. H. ROOT	J. T. CALVERT
Editor	Editor Home Dept.	Managing Editor	Business Manager

"When we receive your Honey
Return mail brings your Money."

The Fred W. Muth Co.

Get Service Like this Man

Lake City, Mich., May 5, 1917.

Friend Muth:—Your letter with check for $146.20 for wax has been received. Thanks. I do believe you beat them all when it comes to quick returns for goods shipped you. I may have some more wax to sell after we get our cappings melted.

Yours truly,
(Signed) Elmer Hutchinson.

We Want Immediately

Extracted Honey

We buy all grades of Extracted Honey. Large or small lots. Send sample and price. If price is right we will buy. Parties who have Fancy and No. 1 Comb Honey, write us at once. We will buy from 40 to 50 carloads this season.

Beeswax

Send us your beeswax. We pay highest market prices, and send you our check the same day shipment is received.

Old Comb

Make some spare money from the wax rendered from your old comb. We will render it, charging only 5 cents per pound for rendering, and pay you best market prices for the wax rendered.

Shipping-cases for Comb Honey

We are prepared to ship you the same day order is received any number of shipping-cases. Several carloads are here now, ready for buyers. Send your order in now before our supply is exhausted. We sell Lewis Beeware.

Remember We remit the same day your shipment arrives. Read the letter above and be convinced that this is the house to send your shipments to. Try us.

The Fred W. Muth Co.

"The House the Bees Built"

204 Walnut St., Cincinnati, Ohio

HONEY MARKETS

The honey market is as full of complications as possible. The general but uncertain high prices of all foods, governmental intervention by Food Commissioner Hoover in the sugar market, unprecedented buying of honey for export, speculative buying of honey, and the still uncertain total amount of this season's crop, are all factors in present market prices.

Very recent inquiry by ''Gleanings'' over the Northern and Western states (not the Pacific Slope nor South), of fair and unprejudiced sources, would indicate that the total crop is materially short. There are localities, notably in New England and Wisconsin, where the crop is reported as above normal. There are ''spots'' over the whole North and West where the honey-yield has been excellent, but these are the exception. New York, Michigan, Ohio, Indiana, Colorado, and Idaho report a crop of only about 50 to 60 per cent of normal. Illinois has a very poor crop and Iowa perhaps even poorer. California's crop is short and the Texas crop almost a failure.

In this same general section of the country, honey-buyers have been offering from 10 to 13 and 14 cents per pound for white extracted, and some producers are holding for even higher prices. Comb honey is not attracting the market attention it formerly did, but the price offered is high—for fancy 17 to 20 cents generally. It should be interesting to comb-honey producers to know that a number of beekeepers in New England report selling comb honey locally to consumers at from 30 to 40 cents a pound.

Buyers are more numerous than ever, with Italy an active buyer, altho Great Britain and France are not actively in the market for the time being, waiting until prices shall be a little easier, so we are told on good authority.

Should the producer sell now or wait till later? ''Gleanings'' is not prepared to advise. If honey sells on the docks in New York at 14 and 15 cents, and even 16, what should the beeman get? Freights are high and congested. Cartage, literage, and storage are advanced. The average broker or big buyer does not care to bother with little shipments. A carload or a hundred-ton lot will interest him; but a lot of a thousand pounds, more or less, does not attract him unless he can arrange with some one to gather up these small lots and make up a shipment. On the average it costs about a cent a pound to get extracted honey to the market. This does not include container. The freight on a carload shipment from California to New York is 1¼ cents, one cent from Colorado, and about a cent for less than carload shipments east of the Mississippi to the eastern markets. Taking it on the average, some one must pay one cent a pound for freight. The average buyer or broker will not ordinarily handle a crop on a margin of less than about one cent. He may be able to buy on a margin of half a cent; but he is right now thinking of what Food Controller Hoover may do (for Hoover has already closed the New York sugar exchange), and he does not propose to be caught.

To get down to brass tacks, if the honey sells for 14 cents on the dock in New York, the producer may not get more than 12, and he will have to furnish the container. In the same way a honey that brings 15 cents might bring the producer 13. On the other hand, we know of a number of lots in California that sold, f. o. b. producer's station, for around 13 and 14, and some as high as 15; but the average of the honey has sold for less than that. The producer must remember that some one must pay freight, cartage, literage, and storage, and some one must find the market, and for that service he will charge not less than an average of one cent. ''Gleanings'' believes that some lots of clover that sold on the docks in New York brought 16 cents; but so far as we can ascertain the most of it sold for less.

Below we print the markets as quoted by the large buyers and by the U. S. Government Bureau of Markets:

CHICAGO.—Several small consignments of honey are appearing on the market. The price of white comb that grades from No. 1 to fancy is 20c per lb. No ambers so far offered. Extracted white of good flavor and body brings 14c in the 60-lb. cans. Barrels bring about 1c per lb. less. Beeswax is ranging from 35 to 38c per lb. R. A. Burnett & Co.
Chicago, Aug. 17.

PORTLAND.—New comb honey is coming in slowly; demand better than last report; prospects fair for later shipments. Very erratic market at present. Very little new extracted is offered, as season is late. Generally speaking, would say that prices will be higher than last year. We quote comb honey, extra fancy, per case, $4.00; fancy, $3.75; No. 1, $3.50; No. 2, $3.25. Extracted honey, white, per lb., brings 12c; light amber, in cans, 11c; amber, in cans, 10c. No beeswax offered.
Portland, Ore., Aug. 13. Pacific Honey Co.

KANSAS CITY.—Demand for both comb and extracted is improving, while receipts are light. No carlots have been received on this market yet. Most of the supply is native. We quote comb honey, extra fancy, per case, $4.50 to $4.65; fancy, $4.50; No. 1, $4.35 to $4.45; No. 2, $4.25. Extracted honey, per lb., brings 15c; light amber, in cans, 14c. Clean average yellow beeswax, per lb., 40c.
C. C. Clemons Produce Co.
Kansas City, Aug. 17.

DENVER.—We are at present selling new honey to retailers at the following prices: No. 1 white comb honey, per case of 24 sections, $4.50; No. 2 at $4.00; extracted white, according to quality, 16 to 18c. We are buying beeswax at all times, and are at present paying 34c cash and 36c in trade for clean yellow wax delivered here.
The Colorado Honey Producers' Ass'n,
Denver Aug. 17. F. Rauchfuss, Mgr

CLEVELAND.—Old crop of comb honey is entirely exhausted. Only a very little new honey is yet coming in. This sells at about $4.50 per case. We quote comb honey, new crop, fancy, per case, $4 50. Supply very limited and uncertain.
Cleveland, Aug. 18. C. Chandler & Son.

ARIZONA.—Everybody is anxious to sell with strong price, except those who were foolish enough to contract at $7.00 to $8.00 per case some time ago. Quality is good so far. Later yield, if any, will be lower grade and price. White mesquite extracted

honey brings $13.00 per case; light-amber extracted $12.60 per case; light-amber alfalfa, $12.00 per case. Clean average yellow beeswax brings 30c.
Phoenix, Ariz., Aug. 13. Wm. Lossing.

(NEW YORK.—The honey market quotations for September received by GLEANINGS IN BEE CULTURE from New York were manifestly so much below general quotations there that we do not publish them. These quotations if printed could only prove misinforming and unfair to the honey-producer. In a general way, we can say that extracted honey has recently sold on the docks in New York at from 12 to 15c.—The A. I. Root Co.)

PHILADELPHIA.—We have nothing to report at this writing. As yet with us there is no demand (usually the summer condition of trade), and thus far no receipts worth speaking of. Beeswax is bringing 40 to 43c. Chas. Munder.
Philadelphia, Aug. 17.

ST. LOUIS.—No comb honey in this market; old stock entirely cleaned up and new stock not arriving. Extracted honey in fair demand. Extracted honey, light amber, in cans, brings 14c; amber, dark, in cans, 12 to 13c; in barrels, 10 to 11c. Clean average yellow beeswax brings 35c.
St. Louis, Aug. 17. R. Hartman Produce Co.

BUFFALO.—It is impossible for us to quote, since there is no new honey offered on this market. None has come in yet, and it will probably be ten days or two weeks before any arrives. From what we can learn, however, we believe that if we had any new fancy comb honey we could sell the same for about 20c lb. Gleason & Lansing.
Buffalo, Aug. 16.

SYRACUSE.—Our honey here seems to be of excellent quality. The demand is not great for anything; but some is being sold. We quote comb honey, extra fancy, per case, $4.80. Extracted honey, white, per lb., brings 15c; light amber, in cans, 14c. E. B. Ross.
Syracuse, N. Y., Aug. 17.

PITTSBURG.—Practically no demand. We expect better inquiry as season advances. Prices are as previously reported. W. E. Osborn Co.
Pittsburg, Aug. 18.

DETROIT.—We have no information to offer on honey, as there is very little to be had at present.
Detroit, Mich., Aug. 16. F. P. Reynolds & Co.

GEORGIA.—The demand has been so great our stock has all been sold. The bees are doing finely, so will have a good crop next season. We quote comb honey, extra fancy, per lb., 10¾c. Extracted honey, white, per lb., brings 10¾c; light amber, in cans, 9c. No beeswax is offered.
Columbus, Ga., Aug. 17. S. S. Alderman.

FLORIDA.—About the middle of June the demand for honey was greater than ever before. The agents of different concerns came down and bought all the honey in our section—tupelo at 10½c per lb., wild tupelo, 8c. S. S. Alderman.
Wewahitchka, Fla.

SAN FRANCISCO.—New crop extracted is moving out fairly well, considering the high prices, altho the local market will see a curtailed consumption if prices continue high. It would seem that, as far as the San Francisco market is concerned, it is still unsettled. We quote extracted honey, white, per lb., 12 to 13½c; light amber, in cans, 10 to 11½; amber, in cans, 8 to 10c. Clean average yellow beeswax brings 35 to 38c. Leutzinger & Lane.
San Francisco, Aug. 14.

LOS ANGELES.—No comb honey in market. Extracted honey, white, per lb., brings 17 to 18c; light amber in cans, 12½c to 15c; amber, in cans, 11½c. Clean average beeswax, per lb., 40c.
Los Angeles, Aug. 13.

MONTREAL.—Very favorable report on crop for 1917. We quote comb honey, extra fancy, at 16c; fancy, 15c; No. 1, 14c; No. 2, 12c. Extracted honey, white, per lb., brings 13c; light amber, in cans, 12½c; in barrels, 12c; amber, in cans, 11½c; in barrels, 11c. Gunn, Langlois & Co., Ltd.
Montreal, Aug. 17.

TORONTO.—The market is in the same position that it was last month. The old crop of honey is exhausted, and prices for new crop are not named.
Toronto, Aug. 16. Eby-Blain, Ltd.

HAMILTON.—Some new coming in, but not in quantities. Have not purchased any new yet. All old cleared out. F. W. Fearman Co., Ltd.
Hamilton, Ont., Aug. 16.

CUBA.—Extracted honey, light amber, in barrels, brings $1.05 a gallon; amber, in barrels, $1.05. Clean average yellow beeswax, per lb., brings 35c.
Matanzas, Cuba. Adolfo Marzol.

MEDINA.—We are buying comparatively little honey, and this is entirely for our Airline use at the present ruling high prices, which we regard partly as the result of *speculative* buying. At this writing we are offering 12c for average white extracted, and for a very limited amount, from nearby points, of extra fancy, water white, we would offer 13c. The price of comb honey remains unchanged. We regard the market as very uncertain, likely to go up or down temporarily at least, the prices today being governed, we believe, entirely by the export demand; and as our quotations to buyers of Airline blend are now made, we find a limit of price above which we cannot purchase.
Medina O., Aug. 20. The A. I. Root Co.

U. S. Government Market Report.

New York.—Honey arrivals: 316 barrels and 20 tierces, Porto Rico, 1 car California, 800 cases Texas, 15 barrels Virginia, and 825 barrels Cuba. Beeswax arrivals: 3 barrels, 3 cases, 7 bales, Porto Rico; 56 barrels Texas; 40 bags Cuba. Honey market: domestic demand light; export demand fair, but spasmodic. West Indian stock, $1.30 to $1.60 per gallon; California, light demand; few sales, $1.40 to $1.80 per gallon. Beeswax, market quiet, weaker; few sales. Supply exceeds demand. Yellow, 39 to 40c per lb.; dark, 37 to 39c per lb.

Kansas City.—Old stock, supplies practically exhausted. New stock, approximately 60 cases native Missouri. Demand light, movement moderate, market strong, all sales in small lots. Native Missouri, 24-section flat cases No. 1, old stock, mostly $4.50. New stock mostly $4.50 to $4.75 per case. No extracted honey on market. Beeswax, receipts very light; demand and movement slow; all sales in small lots; best, mostly 40c lb.

Denver.—Approximately 22,000 pounds white to light extracted; 1300 cases comb honey arrived. Demand and movement moderate, market steady. Jobbing: comb honey, 24-section cases; firsts, $4.50; seconds, $4.00 per case. White to light extracted honey, 11 to 16c lb.

Minneapolis.—26 cans extracted arrived; all sales in small lots; light local receipts. Local stock, extracted honey, 10-lb. tins, 15c lb.; comb honey, 1 and 2 dozen boxes, 18 to 22c lb. Iowa, no quotations.

Cincinnati.—One car California, 10 barrels and 30 boxes Indiana, 50 barrels and 3 boxes Kentucky, arrived. Nearby receipts light, beekeepers holding for higher prices. Market very strong, demand light on account of high prices; few sales. New stock extracted honey, light amber, blended, 14c lb. California, no sales reported. Comb honey, fancy white, heavy, $4.20 to $4.25 per case; No. 1, white, heavy, $4.00 per case.

Philadelphia.—No arrivals comb or extracted honey, no sales reported; 48 barrels Porto Rico reported July 31 still being held. Crude beeswax, new, 40c lb.

Chicago.—No fresh carlot arrivals. California, small lots, amber extracted, 13½ to 14c lb. Small lots from nearby states, extracted honey, 13 to 14c lb.; comb honey, 16 to 18c lb.

St. Paul.—One car Arizona extracted, 540 pounds Ohio comb honey arrived. No quotations.
Charles J. Brand, Chief.
Washington, D. C., Aug. 15.

In Stock for

Immediate Shipment

800 cases two 5-gallon cans
12000 5-lb. and 10-lb. pails
Shipping-cases for comb honey

Write us

M. H. Hunt & Son, Lansing, Michigan

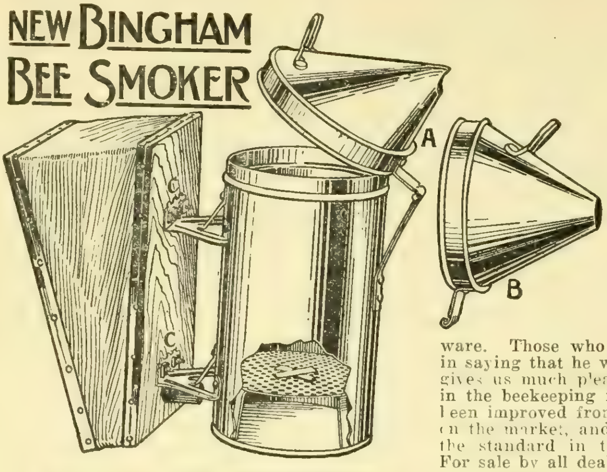
NOTICE!

Honey . Wanted . Honey

Do not forget, when your crop of honey is ready for sale, to send us a sample. State your price, also how it is put up. We are in the market for unlimited quantities, and will pay cash on arrival. Let us hear from you before selling your crop.

C. H. W. Weber & Co., Cincinnati, O.
2146 Central Avenue

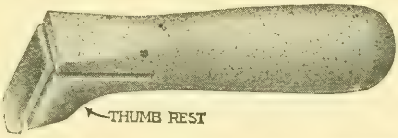
NEW BINGHAM BEE SMOKER

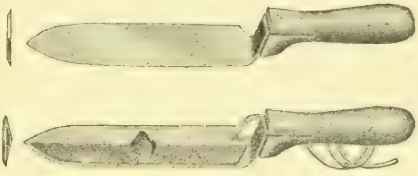


In 1878 the original direct draft bee smoker was invented and patented by Mr. T. F. Bingham, of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey-knife for nearly thirty-five years; and in 1912, becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general bee-ware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men and it gives us much pleasure to help perpetuate his name in the beekeeping industry. Bingham smokers have been improved from time to time, are now the finest on the market, and for nearly forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.

Smoke Engine, 4-inch stove	$1.25
Doctor, 3½-inch stove	.85
Two above sizes in copper, 50 cts. extra.	
Conqueror, 3-inch stove	.75
Little Wonder, 2½-inch stove	.50

Hinged cover on two larger sizes.
Postage extra.





Bingham Honey Uncapping Knives

with New Cold Handles

We are furnishing the same quality steel, best money can buy, thin-bladed knives that Mr. Bingham manufactured years ago. The old timers all remember these knives and many are writing in as Mr. Volstad in the following letters. The substitutes offered by others have not given the satisfaction desired.

A. G. Woodman Co. Lyle, Minn., June 21, 1917.
Gentlemen:—Have you the thin good-working uncapping-knives we used to get about 20 years ago, and that worked to perfection?

We sent an 8½ and 10 inch knife and received the following letter:

A. G. Woodman Co. Lyle, Minn., July 5, 1917.
Gentlemen:—Knives received; glad you sent them at once. They are just what I want and have been looking for but did not know where to get them.
K. H. Volstad.

Many of the most extensive honey producers insist on the Genuine Bingham knives. Mr. N. E. France of Plattsville, Wis., gave us a fine unsolicited testimonial on the steam-heated Bingham knife, too long for this space. Present prices are: 10-inch knives, 85 cents each; 8½-inch knives,75 cents each; steam-heated knives with tubing, $2.50 each. Postage extra.

TIN HONEY-PACKAGES

YOU WILL MAKE A MISTAKE if you do not ask for our LOW PRICES on Friction Top Pails and Cans. We are SAVING MONEY for carload buyers and others of smaller lots, why not you? Our three-year contract is enabling us to make prices a considerable under general market quotations. Let us hear from you, specifying your wants.

A. G. WOODMAN COMPANY

Grand Rapids, Michigan

SHIPPING-CASES
PROMPT SHIPMENT

By the time this issue of Gleanings reaches you you will know your requirements for shipping-cases. We We have quite a supply of these on hand now and can ship promptly.

Better order at once as freights are slow, and as they are heavy must go by freight. Express would be too expensive. Next month figure out your wants for next year; then send an order for goods on which we will allow an early-order discount. In ordering shipping-cases please remember they have advanced in price 4c each. . . . .

F. A. Salisbury, Syracuse, New York
1631 West Genesee St.

HONEY WANTED

Have you any light amber or white EXTRACTED HONEY?
Send us a sample of what you have and state how packed.
We will name you our best spot-cash price.

Friction-top Cans and Pails

WE CAN NOW FURNISH FRICTION-TOP CANS AND PAILS AT THE FOLLOWING PRICES F. O. B. CHICAGO, KEOKUK, IOWA, OR HAMILTON, ILLINOIS: : :

2-lb. cans in crates of 612—per crate	$26.75
2½-lb. cans in crates of 450—per crate	22.50
2½-lb. cans in crates of 12—per crate	1.40
5-lb. pails in crates of 200—per crate	16.00
5-lb. pails in crates of 100—per crate	8.25
10-lb. pails in crates of 100—per crate	12.50
10-lb. pails in cases of 6—per case	.95

Beehives and Supplies

For beekeepers who buy wisely, we have just received ten carloads of ''LEWIS BEEWARE,'' everything bright and new. Quality unexcelled. Send us a list of your needs. We will gladly quote you prices that will save you money.

Save Your Combs and Cappings

and send them to us. Our high-pressure outfits and special equipment will get out all the available wax. The extra wax we get usually more than pays for rendering charges.

For your share of wax we will either pay you the highest cash price or work it for you into

Dadant's Foundation

If your bees are not already acquainted with DADANT'S FOUNDATION you should give them a chance to test it. Their action will be more convincing than our words, ''Best by Test.''

Dadant & Sons, Hamilton, Illinois

GLEANINGS IN BEE CULTURE

SEPTEMBER, 1917

EDITORIAL

STARTLING MARKET CONDITION.

THE OTHER DAY the editor stood at one of the Brooklyn docks, New York, and saw 2000 tons of honey ready to load on a ship for Italy, and more to follow. Two thousand tons, or a whole shipload, and selling at 14 cents per pound on the dock! A little of it was mountain sage from California, but most of it was from the bellflower, from Cuba. All of it was honey, as the marks showed, and as the ooze from between the cracks of the barrel-staves plainly showed. If the reader can imagine a stack of barrels and cases 10 feet high 50 feet deep and extending the length of a dock for some 300 feet he will be able to form some idea of the quantity. We were anxious to secure a photo; but, no. Strict government regulations prevented. On asking the superintendent of the dock he assured us that, while he would be very glad to grant us the privilege of taking a picture, he had positive instructions to permit no camera to be used.

This large amount of honey was bought and sold to Paton & Crowell, of New York, to agents of the Italian government.

Fact No. 2.—We learned of another shipment going to the same government, consisting of 1000 barrels of West India honey, selling for slightly less than 14 cents.

Fact No. 3.—A lot of 100 tons of honey from the West Indies was sold to a broker for 66 cents a gallon. Fifteen minutes after arrival at the dock the entire lot was sold at $1.80 a gallon—a net profit of $20,000 all in one deal. Said the broker, with a twinkle in his eye:

"You may call that robbery. Say, Mr. Root, if a honey-producer would offer you a fine lot of honey at a price below its market value, would you say to him, 'My dear fellow, I love you so dearly that out of the goodness of my heart I am going to tell you that the honey is worth more than that, and I will pay you the full market price?' Or would you say, 'I will take it,' as I did? And, again, when a buyer, seeing that honey, called me up on the phone and asked me what I would take for it, I was afraid to make him an offer. The fact was I wanted time to catch my breath. I told him I did not want to sell that day. When he said, 'Well, make me an offer,' I thought I would make a price that he would not be able to accept, as I did not want to sell at the market prices then prevailing. But when he did accept, do you think I was going to say to him, 'My dear fellow, you are paying too much?' Not on your life. When the buyer and producer do not know what a commodity is worth they have got to pay me for what they do not know but ought to know. I ain't in business for my health."

Then he gave a little chuckle and a twist of the hand, suggesting he would do it again if he had a chance.

Fact No. 4.—The Italian government is buying enormous quantities of honey. Their agents have been buying recklessly. In the meantime Great Britain and France, more conservative, seem to have dropped out, altho they are watching their chances; but apparently they are not willing to pay the prices that Italy has been paying.

Fact No. 5.—There appears to have been a large crop of Cuban and West India honey the past season. All of it has gone to Europe.

Fact No. 6.—There is a shortage in the crop of extracted honey in the eastern states as compared with last year. Some estimate it at 25 per cent of last year's crop and others 50 per cent, while a few report a normal yield. There was a failure in Texas, short crop in California, a light yield in Colorado, and a fair yield in Idaho.

Fact No. 7.—All last year's honey, comb and extracted, has been cleaned up.

Fact No. 8.—Brokers and big buyers are scouring the market for extracted honey. One broker is bidding against another, all of which has a tendency to "bull" the market. Said one broker: "The market is decidedly bullish at the present time; but I am expecting a big slump. When Italy gets filled up, like Great Britain and France, mark what I say—prices will go tumbling, and then the fellow who has been going around the country contracting in advance will be left high and dry, believe me."

Fact No. 9.—The editor got a calling-down in New York for "bulling" the market in some recent speeches at several of the field meets which he attended in the East. Telegrams were hurriedly sent to the big buyers, telling that Root had boosted the market clear up, and that they (the buyers) had got to come across with more. Said one buyer: "Mr. Root, you surely have 'spilled the beans.' We thought you were with us. You will have to come across with more money yourself. Why didn't you keep still until we had bought up and then play your bull antics? You fired your wad too soon."

What do all these facts mean?

They mean that prices on extracted are "bullish," and will probably stay so provided the allies continue to buy honey, and provided, also, that Food Controller Hoover and the allies of Europe do not put honey on the same basis as sugar, so that the consumer can get only a small quantity. And this leads to the statement that the *furore* in honey-buying from Italy is based on the simple fact that sugar has been commandeered in that country. That means that the consumer in Europe can buy only a very limited quantity—not enough to supply his needs or demands. Honey is a superior substitute for sugar. The consumer can buy honey, as much as his pocketbook will allow, and he is actually paying 50 to 60 cents per pound for extracted honey in Italy—the very same article that the producer, in one case at least, sold for at least 66 cents a gallon, or 5½ cents per pound. Here is an extreme case where the consumer is paying about 1000 per cent above the price paid to the producer. What do you think of that? War prices, war freights, submarine insurance, and last, but not least, brokers' profits.

We did not hear very much about the activity of the comb-honey market while in the East. While comb honey will doubtless sell for more than it did last year, it is now bringing somewhat more. It is very evident that the allies do not want comb honey. This commodity must be consumed wholly at home; but the price of comb honey is likely to go up in sympathy with extracted.

There are some things that indicate that Italy is getting wise like her allies, and will refuse to pay a higher price for honey that is considerably beyond the price of sugar. Whether Italy or the other allies will continue to buy honey, whether they will pay more than they have been paying, no one can tell. It may be that the producer will get more by waiting. Perhaps he will do better to sell now. We don't know, and we don't believe any one else does.

* * *

THE BIG HONEY-BROKERS.

ELSEWHERE WE HAVE made mention of the fact that honey-brokers are abroad in the land, and some of them have made big money within the last three or four years, particularly since the allies have begun to buy honey when they could not get sugar.

We know of one firm that, a few years ago, put $10,000 into the business, and whose credit at the bank now is good for a million dollars; and we should not be at all surprised to learn that they have bought in the last twelve months a million dollars' worth of honey; and we know of several brokers in New York and Chicago who have bought honey in five and ten carlots; and while they doubtless sometimes make a "big scoop," yet, if our information is correct, the majority of them do not clear over a cent a pound; but even that much on 100-ton lots means a big sum of money.

In these days of war prices there is no doubt that there are food speculators in the land, and some of them have become immensely wealthy within a short time. We have no defense to make for the speculator. He ought to be curbed, and we hope Hoover will do it. A legitimate profit is permissible; and there is no dodging the fact that nearly every one, if he had a chance to make a scoop, would do it if he could; and almost in the same breath the same fellow who would condemn the man for making an enormous profit is the very man who would do some scooping if he were smart enough.

But what about the broker? Is he an unmitigated evil or a necessary evil, or is he an evil at all? All we can say is that there are brokers and brokers, some good and some bad. It is the latter, just as it is in the other professions, that hurt those who are trying to do an honest business.

After a talk with brokers in several of our big cities, we have come to the conclusion that many of them are honest. As one of them very correctly said, "I cannot afford to rob my clients and customers, because that would prevent me from doing any business with those same people in the future. I am trying to do an honest business with the same people year in and year out."

There is no doubt that the big buyer and the big broker have helped to "bull" the market on honey. There are so many of them that they bid against each other. Said one big broker in Chicago, "If the buyers would stay out of the field for a while the market would decline; but, no; they must all rush in, with the result that we all have to pay high prices."

There you are. One buyer tries to get ahead of the other fellow; and in the grand rush they boost prices. If they could all combine, they could stand back and say they would not pay more than 10 cents per pound for honey; but fortunately they cannot control each other, with the result that the bad broker and the good broker, the big buyer and the commission man, prevent a cornering of the market.

But perhaps one says: "Why not cut out the middleman? Why should not the beekeepers organize and sell to the markets of Europe direct?" They have been talking that for the last forty years, but have not done it. So far they seem unable to effect the necessary organization to accomplish this. The probabilities are that the middleman will always be a necessary evil. He will have the ready cash, and he will be able to get hold of the very large buyers, such as great corporations and even governments, a thing the individual producer cannot do.

THE DISAPPEARING DISEASE.

S. D. HOUSE, at the field meet at Camillus, N. Y., told us that the disease we described editorially in Gleanings, page 590, had appeared last season in his locality, and that he was considerably alarmed, as it cut down his colonies so much that it interfered with the yield of honey. He did not believe it was due to a germ nor to any form of disease—that it was simply a case of malnutrition.

This disappearing or Isle of Wight disease, it will be remembered, comes on during a rainy chilly spell, and just before a honey-flow. During periods of intermittent sunshine the bees have access to pollen and but very little nectar. This thing continues for days and days. At the general opening of the honey-flow the bad symptoms begin to be very manifest; but as soon as the honey-flow is well under way accompanied by good weather the disease disappears—hence the name, "disappearing disease."

Mr. House's theory is that the intestines of the bees become overcharged with pollen, and that the real trouble is indigestion caused by too much nitrogenous food in the general diet. In other words, they are forced, he thinks, to use an unbalanced ration.

Mr. R. F. Holtermann, of Brantford, Canada, and other beekeepers of Ontario, have found considerable of the disappearing disease this summer, and for a time they were considerably alarmed; but, true to its name, it began to disappear—not, however, until it had done considerable damage in their apiaries. Warm sunshine, lots of it, and plenty of honey seemed to cure it.

Mr. House may have offered the true solution of the trouble. Some two years ago, when the discussion came up, many reported that they cured the disease or malady by feeding sugar syrup in connection with some antiseptic. In almost every case the feeding seemed to mitigate the trouble—sometimes curing it entirely. It was supposed by each of the writers that the particular anitseptic that they used was the thing that did the cure; but the probabilities are that feeding sugar syrup for honey would make up a balanced ration. In other words, the bees were given something that they could digest.

SWEET CLOVER AND ALFALFA AS FEEDS.

IT HAS BEEN quite generally believed that the feeding value of alfalfa for cattle was ahead of sweet clover. In our issue for July, page 512, we intimated as much, and now one of the Kansas farmers has come back, saying the statement is not true—at least it is announced that the Agricultural College of Kansas conducted some feeding tests where the cattle were divided in two separate groups. One group was given rations of alfalfa hay, and the other was given sweet clover. The sweet-clover steers won out, gaining 25 per cent more per 100 lbs. than steers fed on alfalfa hay.

This might not prove to be true in other localities; but even if the sweet clover should hold its own on an even basis it will probably take the place of alfalfa.

Sweet clover grows more readily on almost any kind of soil where alfalfa must have conditions favorable. It does not bloat cattle as does alfalfa, and will go deeper thru hardpan than alfalfa. With one or two exceptions alfalfa yields honey only in irrigated states, while sweet clover furnishes nectar anywhere on any soil.

Sweet clover is a great honey-plant, and is destined to be the most valuable one in the United States if we except white and alsike clover. It yields honey every year, dry or wet, on any soil, sweet or acid, altho it prefers good soil with lime in it. It has in some states made land that was worth only $10.00 per acre now worth $200 per acre. It is so much in demand that its seed is the highest-priced of any seed in the market.

On the other hand white and alsike clover require favorable conditions or else they will not give up their nectar, if, indeed, they will grow at all.

Beekeepers should take pains to herald these facts everywhere in their locality.

Perhaps it would not be out of the way if they would carry pocketfuls of seed and scatter it in localities where nothing but useless weeds are grown. Nobody is harmed, and, moreover, the farmer and the beekeeper will be greatly benefited.

* * *

DIAGNOSING BY THE FLIGHT OF BEES

WE HAVE BEEN using this plan more and more of late. In some respects it is more reliable than a mere examination of the combs. If the colony shows bees going out and in rapidly, and coming just as rapidly, it is as sure as fate that they will need room soon; and without room they will swarm. A colony that has started in to work well should be kept busy by keeping ahead of it.

Entrance diagnosis saves time—hours of it—when time is most precious. Away back in the early 70's and 80's A. I. Root used entrance diagnosis very largely, and the writer as a mere boy then remembers distinctly how he used to catch us up after we had been all over the yard in detail, comb by comb; and after a survey of five minutes in the beeyard he would show where we had failed to do what ought to have been done earlier. We used to imagine he had some X-ray eyes, and could look clear thru a colony, for we did not see how under the sun he could tell from the outside in three seconds what that colony was doing, and what it would be likely to do unless taken care of.

In the years that have passed since, by the use of X-ray eyes on other hives we have come to the conclusion that entrance diagnosis, so far as the need of room is concerned, in respect to the future is more reliable than looking down into the hive itself, because it shows what the colony is going to do, and that means swarming unless room is given. A colony may be ever so full of stores; but unless its bees are active at the entrance it is not likely to need more room.

* * *

BROOD IN POUND PACKAGES

ONE GREAT advantage of the combless package of bees is that it will not carry brood diseases. On account of that, the business has grown to enormous proportions. But lately some have been shipping pounds of bees with a frame of brood. In regard to this, Provincial Apiarist Morley Pettit, Ontario, writes:

> I wish to enter a protest against the shipping of bees in pound packages with a comb of brood in each. One of our beekeepers purchased recently from .... 10 three-pound packages with a comb of brood in each. A few days after he had received these he found both American and European foul brood in the colony, and in every case the disease showed in the comb which came with the package. I would not care to have you mention the name of the party along with my name; but there should be a strong protest against the shipping of bees on so-called natural stores or with a comb where they would have brood. Such a practice simply defeats the main purpose of the combless package, and makes it a possible carrier of disease instead of one which is practically safe against the carrying of disease.
>
> Morley Pettit,
> Provincial Apiarist.
> Guelph, Canada.

We have for years shipped nuclei with bees and brood. Our yards are under careful surveillance and state inspection, and so far we do not know of a case where brood disease has been carried that way. But if one proposes to ship bees in pound lots let him go to the limit and be safe. On the other hand, no one should buy nuclei or full colonies unless he knows the party of whom he is buying is taking every precaution against brood disease. Diseases are scattered pretty well over the country now, and it behooves the buyer to be careful as well as the shipper.

* * *

WEIGHT OF SEALED BROOD

DID YOU EVER NOTICE that a frame full of sealed or hatching brood is about two-thirds as heavy as a frame of honey of the same thickness of comb from capping to capping? When "hefting" a colony to determine the amount of stores, one is liable to be misled if there is a large amount of sealed brood in the hive.

LESSONS OF FIFTY YEARS

A Famous Pioneer in Beekeeping Interviewed, Tells of Many Things Done and Learned

By R. F. Holtermann

SOME twelve miles from Fort Plain is the home of P. H. Elwood, one of the most prominent of the New York beekeepers. He is now in his seventieth year, and has been keeping bees for more than 50 years. His first connection with bees was in 1862, when a bee-tree was found and 100 pounds of honey obtained.

Mr. Elwood and Capt. Hetherington formed a partnership which was continued for five years. The former had made a start in beekeeping with the old box hive; but during the partnership, coming in frequent contact with Moses Quinby, who lived but ten miles away, they decided to use his hive. Mr. Elwood is even now using the Quinby hive (altho he owns others) secured when buying bees. At the start they bought bees which proved to be diseased with American foul brood. Hetherington advised running them for extracted honey on account of the disease, altho only three weeks before the close of the white-honey harvest, removing the queens and allowing all the brood to hatch, then shaking the bees from the combs and destroying the latter. But the trouble practically disappeared, and, therefore, they decided to winter them, and that was the last they saw of the disease.

In reply to a series of questions (for I knew that such disappearance of the disease must be a very rare occurrence), Mr. Elwood said that there was no question about its disappearance, and that it was undoubtedly American foul brood, for Quinby, Hetherington, and Elwood all knew the disease. They claim that (altho rarely the case) if the bees clean out the larvae promptly after they die, and before they become ropy and sticky, the colony may be cured. This may explain why some have found that combs from colonies with American foul brood can sometimes be used without spreading the disease; and there have been cases in which an inspector has pronounced a colony slightly diseased, and later no disease could be found. Mr. James Armstrong, one of the most efficient inspectors in Ontario, told me that if a diseased cell is stirred up with a toothpick, destroying or in a measure breaking up its adhesive contents, it is possible that the cell might be cleaned out by the bees. In fact, Hetherington and Elwood bought and used a lot of combs that had been in contact with the disease. However, I do not for a moment think that any of the above gentlemen would advise depending upon the bees to cure American foul brood.

The second season the partners continued to run for extracted honey and had an average of 112 pounds of honey which sold at 15 cents per pound in kegs. During the same season one colony produced 582 pounds of extracted honey, the colony gaining 57¼ pounds in two days while the basswood flow was on. Nearly all the surplus for the season was produced from basswood, as clover had been largely a failure.

PRICE OF COMB HONEY.

Then they engaged in comb-honey production, and during those years they received an average of about 5 pounds of comb honey per colony. The first season it sold at 28 cents per pound, the honey being built and sold in two-comb glassed boxes which were weighed with the honey and sold at the same price.

INCREASE.

Ever since the box hive was dropped they made increase artificially and sought to prevent natural increase. The combs in the brood-chambers were examined and the queen-cells broken down. This method of prevention of swarming was practiced 44 years ago. Shade for the hives was also used as a preventive. As above stated, they used the large Quinby hive which had a capacity of 100 pounds of surplus on the sides and one story on top. Occasionally they tiered up. The plan was to take the partly filled sections at the sides and finish them on top.

ITALIAN BEES.

The first year Elwood was in partnership with Hetherington they decided to get rid of their black bees, and, therefore, Elwood bought an Italian queen from Quinby and reared queens from her. Her progeny did splendid work, and Mr. Elwood has used Italian blood ever since. There were, however, so many black bees about that the Italians could not be kept pure.

PARTNERSHIP DISSOLVED.

This partnership lasted five years, during which time they increased to about 400 colonies and secured an average of about 50 pounds of comb honey per colony, altho the price received was gradually lowering. The size of the section was also reduced. The first single section was 5¼ x 5¼ x 2 inches, and held about two pounds of honey; and the next size of section was $4\frac{1}{4}$ x $4\frac{1}{4}$ x $1\frac{5}{8}$.

MR. ELWOOD'S LOCALITY.

Since then average yields have gradually decreased. Buckwheat is very unreliable; and, altho the introduction of alsike clover has to some extent made up for the lack of basswood, still the country has become less suited for beekeeping. Mr. Elwood does not consider his section of the country a particularly good bee-country at present, especially since basswood has largely failed and the seasons are more extreme, either too wet or too dry. One reason why basswood does not yield well is because the woods are too open and the soil about the basswood roots dries out more, owing to the access of sun and wind. Last year, however, quite a lot of basswood honey was secured.

GLASSING SECTIONS.

Since first producing section honey Mr. Elwood has continued to glass his sections. He said:

You can tell your folks that Elwood has not got out of the woods yet on glassed honey. He got into the woods 40 years ago, and his circles always bring up at the same place. Some of the beekeepers of the Middle West have been anxious that he find himself; but, "Shall the blind lead the blind?" When I was in New York a number of years ago I saw a wholesaler putting glass on honey bought from an Illinois beekeeper. When my son was in the city this season he saw the same operation repeated. These Middle West men say it is positively wicked to sell glass for honey. What shall we do about it when several million people in New York and other cities in the East want glassed sections? Shall we tell them to stop encouraging wickedness and to begin buying "hayseed" honey that comes in carriers with a bale of hay (more or less) in the bottom of the carrier for a cushion? And the Western beekeepers after a good deal of hard work have obtained the consent of the railroads to charge them double price for moving their honey unless they buy these carriers and furnish the hay. Of course, if the beekeepers will persist in using a section and packing-case so that the honey has to support both the section and the packing-case, he will have to pay the penalty in freight bills, in brokerage, etc. With reasonable care glassed honey will carry safely without carriers. For many years we have had no losses to pay, altho much of our honey has been shipped direct to the buyers. What breakage has occurred has been thru carelessness or bad usage, and the railroad and express companies have paid the loss.

When the Black Hills was a mining camp our glassed honey went there safely, traveling the last 150 miles by stage; and when H. K. & F. B. Thurber & Co. were in business they sent some across the ocean to the Paris exposition, and it arrived in sufficiently good condition to obtain a first prize when exhibited in the original packing-cases. There is no doubt that glassed honey carries more safely in a delivery wagon than any other package.

Not long ago I obtained a section of one of the finest and best advertised brands of carton honey. I pulled the section out of the carton and found a bruised spot on one side; and on turning it over there was a corresponding spot on the other side. There was no leakage, but a spot marring its beauty, and enough of a bruise to set it candying. Uncovered honey is so attractive to flies and other insects and vermin that in some places it has already been ruled out by boards of health. If this ruling should become general the question to be decided is whether comb honey is to be encased in cartons or glass. This statement is supported by the following letter from a wholesale dealer in New York:

> Mr. H. R. Wright:
>
> *Dear Sir*:—If you send me any honey in the future, be sure to send it either in glass or cartons, as the Board of Health rules are very strict here on displaying unglassed or uncovered honey. Therefore, grocers have to keep it in the case. This they do not like to do, as it is not a decent display.
>
> Yours truly,
>
> S. M. Zaiber.

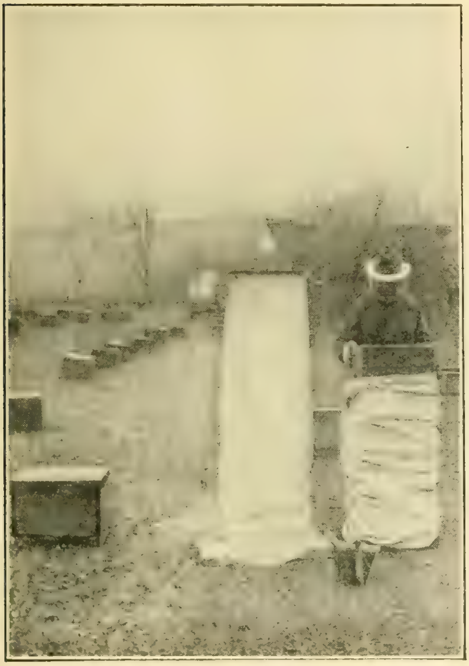
A score of years ago a leading firm of retail grocers in New York said they would buy none but glassed comb honey, and they are still buying it. One of the reasons they gave was that, as far as possible, their goods must display and sell themselves, and that their clerks had no time to show up goods. A few boxes of glassed comb honey set in a window where the light shines thru them will sell more honey than a ton of carton honey placed on the shelves, and it will also sell more than a whole grocery sown knee-deep with advertising. The beauty of putting up honey so it sells itself is that this kind of advertising is inexpensive. The live grocer is awake to this; and when he gets a consignment of peaches he puts them, not in a cool cellar, but out on the sidewalk in the dust and heat of the street where they sell themselves. How many customers will inquire for goods that have their season, unless such goods are displayed? Some of our friends said that the bothersome stamp-act would put a finish to glassed honey. It has not done so, but, on the contrary, has put new life into this style of package. The reasons are that, as comb honey is now sold by the dozen or piece, we give, in addition to the standard assortment of honey, added protection to the goods; added protection to the health of the consumer; and with each section-box a double page of advertising that sells the goods. All this is done at only a slight advance in cost over cartons. No need of stamping such packages, for every cell of honey shows.

LARGE OPERATIONS.

Not much sugar syrup is fed for winter. The fall of 1916, none at all was used. For several years Mr. Elwood had put into winter quarters 1300 to 1400 colonies of bees, and for eight or ten years he began the honey season with something like 1000 colonies. He has run 11 apiaries with 100 or more colonies in each. Now he has seven apiaries with a less number of colonies. In fact, he prefers to have not more than 70 colonies in an apiary. When he had his largest yields he had only 40 in an apiary.

SWARM PREVENTION.

Mr. Elwood is an advocate of a large entrance, two or three inches wide by nearly a foot in length, and still practices artificial increase, obtaining the same when the colony has the swarming impulse. He takes away the queen, one or two cards of brood, and enough bees to protect them. Into the nucleus he puts at least four frames of brood with the queen, getting the additional combs from another colony. Sometimes on the next round he adds brood, bringing the number up to seven combs. The colony which has been left queenless, with queen-cells started under the swarming impulse, are gone into on the next round, which is nine or ten days later, and all but one cell broken down. Sometimes the colony will swarm out when the young queen goes out to mate, leaving the parent hive hopelessly queenless. That is the one objection to Mr. Elwood's plan, for on an average about five per cent will thus swarm out. However, he prefers to take his chance on this.



The bottomless bags prevent robbing, but permit the few bees in the supers to escape.

REMOVING SURPLUS HONEY.

The bee-escape board is not used for the removal of surplus honey, and just here I can not help wondering if in this respect Mr. Elwood has not got a little of the old fossil sticking to him the same as I had when I put the wire-cloth bee-escape between a brood-chamber and six supers with bees. But, never mind. The bees did not smother, but came out of the supers before I went back next day to remove them. And Mr. Elwood is equally successful with his plan. He finds the neatest way of removing supers is by smoking and shaking the bees out, but mostly smoking, giving a shake at last by striking the super on his legs to get rid of hanging bees. The comb-honey supers are piled near the wagon-track, and stacked twelve to fifteen high. A bottomless bag (see illustration) made of duck is slipped over the piles of supers, protecting them against robbers yet allowing the bees to collect and pass out into the bag. The tops of the bags are folded well to keep the robbers out. The same kind of covering is used over the horses' heads to protect them.

CARNIOLANS IMMUNE.

When European foul brood was bad, Mr. Elwood got 100 Carniolan queens, and he and Capt. Hetherington found these resisted the disease better than any other bees they tried. The greater the vigor of the bees the better they could resist the disease, altho all could become in a measure immune.

WINTERING IN THE CELLAR.

Mr. Elwood winters his bees entirely in the cellar. He used to winter outside; but in his section of country bees sometimes do not get a fly for four or five months, and that is hard on bees wintering outside. In what is called their "barn cellar" he once wintered 1000 colonies, but that was too many. A colony which winters badly will often disturb others in the immediate vicinity. He would like to put just enough bees in a cellar to keep up a proper temperature. The building, or cellar, is 20 feet wide, 60 feet long, 7 feet high, and the colonies were tiered four high. Going up from the cellar is a large chimney with three flues, the center one for fire, the outside ones for flues. Artificial heat can be applied, but there has been no occasion for its use. The object in having heat in the center flue was to create a current of air in the others, but this object he accomplished by means of a fire upstairs.

Brantford, Canada.

THE HIVES I USE, AND WHY

Several Different Sizes Successfully Used; the Result of Circumstances and Not of Choice

By J. L. Byer

Readers of the February issue of Gleanings may recall an article by the editor, Mr. E. R. Root, in which he described his brief visit to our home late last November, at a time when roads were almost impassable and rain was pouring incessantly. In describing his impressions while with us, as I remember, he noted that we kept a lot of bees, had a number of different sizes of hives, among them some very large ones, and that we also had a pair of twin boys. As my grandfather and great-uncle were twins, both rather extensive beekeepers for their time, and both used very large hives, possibly these things might be put down as "running in the family."

In accordance with my promise to the editor to send him an article giving some points of management with the different sizes of hives, etc., I wish first of all to dispel any illusion held by any one that I have a number of different sizes of hives by choice, for it requires no argument to prove that an all-around uniform equipment is an asset not to be despised when it comes to the matter of running a lot of bees economically so far as time is concerned, not to mention having supplies all alike, etc.

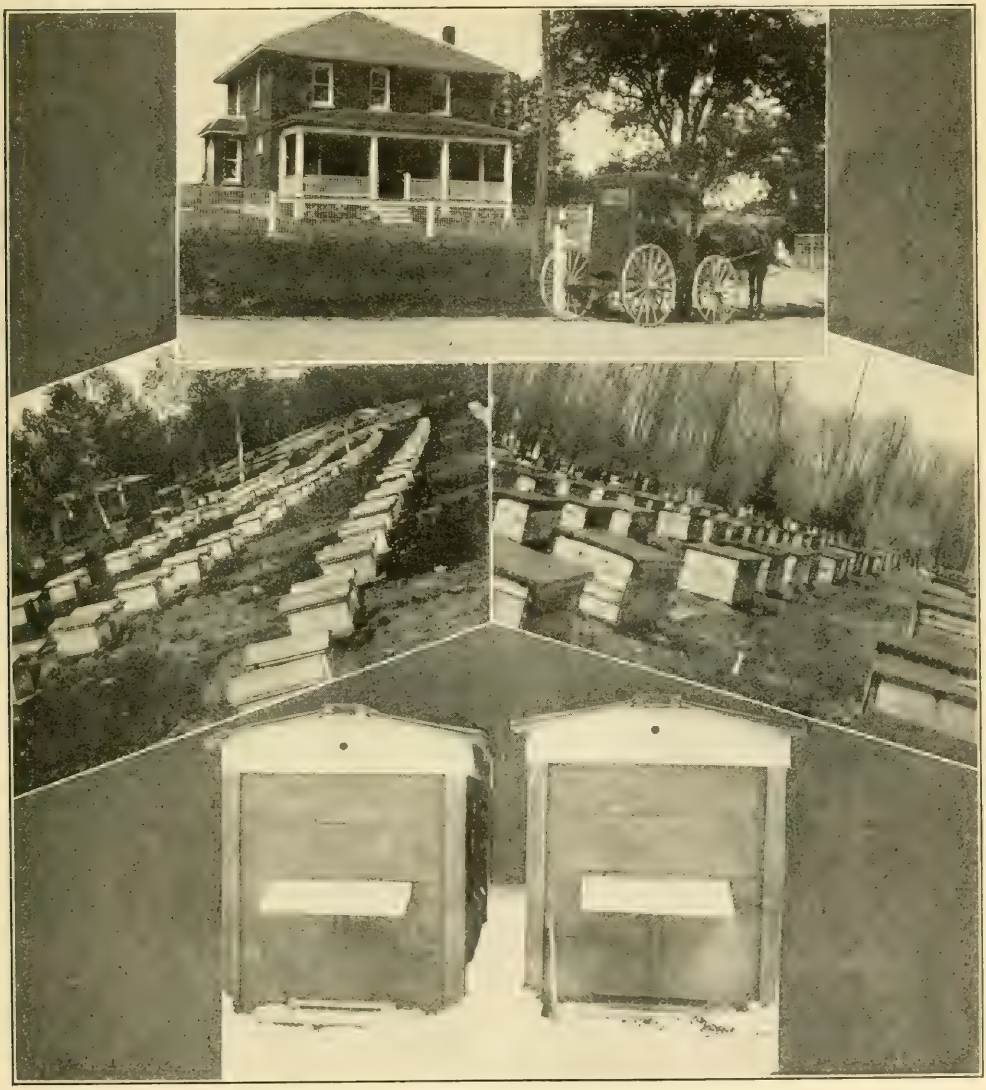
If I may be pardoned for making a few personal references, I will say that, owing to circumstances over which I had no control, I found myself 17 or 18 years ago with my wife and three children, and not $100 of available cash or negotiable paper. Now, while a good wife and family of three children are assets that many a man would give a great deal for, yet the very fact of their possession means something else must be obtained as well—the means of making a living.

To make a long story short, as I had some knowledge of beekeeping I decided to go into the business as fast as I could, at first working at other jobs when I was not busy with the bees. Twenty-four years ago my grandfather died, and a year later his twin brother passed away. Each had about 160 colonies, which were sold by auction after their deaths. D. A. Jones lived near us, and for a while they both had used the Jones hive; but, disliking the short combs running crosswise with the entrance, they soon changed hives and adopted the very large hive mentioned by the editor, and known locally as the "Byer" hive. After the auction sale, of course, these 300 or more colonies were scattered over the country around us, most of them within a radius of ten miles. The inevitable results followed. The majority of the purchasers neglected looking after the bees, and in many cases were glad to sell for less than cost. About the time I started in, many of these lots of bees were available, and that accounts for my having a number of these big hives, which are too large even to suit me, altho I get just as good crops from them as from any other hive.

This hive is 18 inches square, inside measure, and 14 inches deep, taking 12 big frames. Nearly all of our bees are on three different sizes of frames, all L. length, but of different depths. The very large Byer hive being 14 inches deep, and the standard L. hive 10 inches deep, the big hive is just a bit over twice as large as the eight-frame L. The ten-frame Jumbo is 11½ inches deep. In using these three sizes of hives for years and hundreds of each style, I can say there is no appreciable difference in yields obtained, one year with another. Last year, in four apiaries near home, all run by myself exclusively, except for help in extracting, and with localities and flora identical, there was not a difference of five pounds per colony average of any one apiary over another.

Is there different management for the very large hives as compared with the eight-frame L.? Assuredly there is; and if a mixed equipment has done nothing else for me, it has certainly broadened my viewpoint on the matter of sizes of hives. These very large hives are, of course, run a good deal on the let-alone principle. Generally (and especially if we have a buckwheat flow) the bees in these hives require no fall feeding. They winter well as a rule and in the spring, strange to say, they are ready for supers as soon as the small hives. After they once enter the supers, if room is given as required, practically no swarming results; and these rousing big colonies held together during the season will store surplus if any is to be obtained. Of course, with frames of this size full supers are not handled much—it is a question of handling frames instead of supers. I often work alone in the apiary, taking in honey and bringing back the empty combs and accounting for 2500 or more pounds of honey in a day; and I do not think that handling frames is such a drawback as some think.

In working the eight-frame L. hive for extracted honey at out-apiaries, naturally an entirely different system must be carried out than is the case with the very large hive. First of all, heavy fall feeding is always necessary. Then in the spring, as soon as more room is needed, an extra story of worker combs is given without an excluder. At the opening of the flow, if swarming is to be prevented without regular weekly examinations (something I cannot or will not do) radical methods must be followed, and I prefer what is known as the Demaree plan, or a modification of it, as circumstances may warrant. All the brood is taken from the lower story but one comb, the rest of the space being filled with combs or foundation—the latter preferred if the flow is apt to be at all long. The excluder is placed over the brood-nest and then a super of drawn combs followed by combs of brood in the next super above. This should be done before the bees have any notion of swarming; and if honey is coming in fast another super will be necessary in a few days. Much or all depends upon



J. L. BYER'S HOME

One of the apiaries just after being moved 250 miles. The same yard packed for winter.

The hive preferred—the double-walled ten-frame Jumbo.

abundant room being given if swarming is to be absolutely controlled, even when using this plan.

Perhaps it may surprise some when I say that the ten-frame L. size is our hardest problem to solve in the matter of swarm control; and the reason is that it is not large enough to run on the let-alone plan, and too large to run on the plan outlined for the eight-frame size. With me it is a problem to get all the dark fall or spring honey out of the larger-sized hives before the clover flow. Unless all dark honey is out of the combs, the Demaree plan can not be practiced or the clover honey will be spoiled. With the eight-frame L. size of hive it is comparatively easy to get about all this honey used up before the clover flow, and these brood-combs are then used for extracting purposes as fast as they are emptied of brood and filled with honey, with no apparent injury to the white honey crop.

The hive which I use extensively, more than any other, is the ten-frame size commonly called the Jumbo. The management is much the same as outlined for the very large hives, and with pure Italian bees we have little trouble with swarming in most seasons.

Answering the question, then, as to what hive I would use if starting all over, I can say that my preference is for the ten or twelve frame Jumbo size. If forced to use the L. frame, then I suppose I would choose the eight-frame size in preference to the ten-frame L., as the latter is not big enough, or too big, to suit me in running out-apiaries.

I winter outdoors altogether, about half the bees being in single hives permanently packed and the rest in two-hive cases. Personally I do not like the quadruple cases, as they are too bulky and we get just as good results with the smaller cases.

The lower picture, page 677, shows two packed hives in our home yard. This style of hive suits me as well as any I have ever used, and I want nothing better. This hive is made by a local manufacturer; and a strong point is the corner, which is made of two-inch stuff with a one-inch square sawed out of one corner. This inch-square piece is used inside to nail to, while the right-angled strip left is nailed on the corners as the picture shows. This keeps out the water at the corners where sheeting is nailed, and also prevents nails from drawing out by reason of warping or other causes. The bottom is fast. I do not want loose bottoms on packed hives. The entrance is ten inches by one inch deep for summer; and with the block in place for winter (as shown standing in front of the hive) a space is left 8 inches by ⅜ deep. (I have never been an advocate of extremely large entrances as used by some, as I believe that too large entrances are often given, especially in localities where the nights are very cool.) One full-depth super will go on inside of the extension top, which is not packed. The hives are made of cedar, which combines strength with light weight, and lasts for a lifetime.

The second picture shows part of one large apiary, the four rows containing 160 colonies having just been placed in position after a long move by train. To the right can be seen some of the bees that were there before these 160 were transported. Some of them have supers on. There are more than 100 colonies not shown in the picture. This yard is wintered in the two-colony cases.

While I naturally wish that all my bees were in uniform hives, yet the fact remains that they are not, and I have to make the best of it. With a full equipment at all yards, such as lots of supers, etc., one or more extractors at every place, and no moving of supplies from one place to another, I probably have less trouble than most would believe. Then I have never felt that I could afford to change all these hives, for, of course, I could not sell them for what they are worth to us.

I might as well confess that, after all this working with mixed equipment, if a yard of bees were offered me today the first question would not be, "What style and size of hive are they in?" So it looks as if I were past redemption. If combs were all good and straight, built from full sheets of foundation, the chances are that a deal would be made, if price was right, even if the bees were in a style of hive different from any I now have. While it is only natural for a beekeeper to have a hive preference, yet one should not be too sure that the style of hive will do so much better than the other fellow's, for after all it is a question of management adapted to each style of hive, as I have abundantly proved to my own satisfaction during the last ten years.

[For our readers' information, and that these readers may correctly weigh the testimony of Mr. Byer as given in this article, we wish to say that Mr. Byer has proved himself one of the most efficient beekeepers in Ontario. He gets results in honey and dollars, and the very fact that he has succeeded in spite of a serious handicap in the beginning and without outside capital to boost the business along, makes his opinions all the more valuable.—Editor.]

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

"I have a colony which has been queenless for several weeks. Will the instructions for introducing sent with the cage be applicable to such colonies as this one?"

It is doubtful if the instructions sent by most breeders of queens for their safe introduction would be applicable to such a case. Some years ago a man in Canada ordered one of my best breeding queens, and asked for a plan of safe introduction. I wrote him, telling him how I generally succeeded, also how to put the cage on the combs, etc., giving all the items which I considered necessary. A week or so later he wrote telling me that he had lost her in trying to introduce her, and incidentally mentioned that he introduced her to a colony that had been queenless for three or four weeks, and asked what I supposed was the trouble. I suppose his colony had a queen or something it was cherishing as a queen. He did not say whether or not he had given this colony unsealed brood at different times during the time they had been queenless; but from the tone of his letter I judged that he had not. And so in answering this question I wish to call particular attention to and to emphasize this thought: Never try to introduce a queen to a colony which has been long queenless without first giving such a colony unsealed brood, so as to know to a certainty that they are queenless. According to very many letters during the past, asking about the loss of queens in introducing, I am led to believe that more queens are lost in trying to introduce them to supposedly queenless colonies than from all other causes put together.

But I think I hear some one asking, "How shall I know to a certainty that a colony has or has not a queen, by simply putting in unsealed brood?" In all of my experience, covering more than forty years, I find that any colony not having laying workers, or an unfertile queen, will always start queen-cells on brood given them. Even with laying workers, the bees will sometimes start queen-cells; but where eggs are scattered about in the cells promiscuously among the brood given, after three or four days have elapsed, it is easy to know that such bees have something they are tolerating as a queen. As a rule, one might about as well try to get a queen into a colony that has a laying queen as to try to introduce one to a colony having laying workers; and colonies being without a queen for three or four weeks are quite likely to have such workers. If a colony builds queen-cells, and no eggs are visible among the brood given, after four days, it is safe to assume that it is queenless, and that, if the right amount of care is used, a fertile queen may be successfully introduced. But if a colony does not start queen-cells on brood given it, it is a dangerous undertaking to try to introduce a queen.

HOW TO KEEP DRONES THRU SEPTEMBER.

Another party wishes me to tell how to keep drones until late in the season for the mating of queens reared late, in localities where there is not a fall honey-flow. In this locality it is often the case that colonies do not rear drones after basswood ceases to secrete nectar. For this reason, at the close of the basswood honey harvest I go to each hive having my drone-breeding queens and take all the drone brood they have and mass it together in one hive, generally carrying the bees on each frame along with the brood. This brood thus collected makes that hive two, three, or four stories high, according to the amount of drone brood found. The more of this brood that I find in the egg and larval form, the better I am pleased, as this brood will not be out of the cells for nearly a month, so that these last will be in full vigor during September, which month is as late as good queens can well be reared. Before massing this drone brood over the colony, which should always be a very populous one in worker bees, the queen should be taken away, as only queenless colonies will keep drones after the honey-flow is over. The colony is then allowed to rear a queen of its own; and as soon as she gets to laying she should be taken out, and the bees allowed to rear another queen from her brood, and so on, thus keeping the bees in a queenless state, or rearing queens all the time. If this precaution is not taken the drones we are trying to preserve will be killed off as soon as a queen has been laying long enough so that larvae have hatched. If, by being kept thus queenless, the colony becomes weak in worker bees, brood should be given them from other colonies so as to keep them strong enough. Such a colony of drones requires much honey, for each drone fills up on honey every time it leaves the hive for a flight, which is every pleasant day after it becomes of suitable age. There is generally enough honey in the combs containing drone brood to last well into the fall, or till about the time our late-reared queens are ready for mating, when it is advisable to feed some warm thin syrup each day about noon, when it is warm and pleasant, so as to insure a full flight of the drones.

Borodino, N. Y. G. M. Doolittle.

Letters from a Beekeeper's Wife

The Honey Shop, Sept. 1, 1917.

Dear Sis:

I am tired tonight, for the whole family has been bottling honey all day—even Billy has been helping by sticking on labels and putting the jars on the shelves. You know we told you when you were here—it already seems ages ago—that we were going to sell some of our honey in pint and quart jars for a little more per pound to fat, honest Mr. Day, instead of selling it all at wholesale. That is what we have been bottling. I went to town yesterday; and when I saw seven or eight people looking in Mr. Day's window I went over to look too. It was our observation hive full of live bees that had drawn the crowd. (Yes, eight makes a crowd in our village at eleven o'clock in the morning!) They were all so absorbed in watching the moving mass of insects that not one looked up as I joined them. Beside the hive were pyramids of our jars of honey, shining like bottled sunlight. I was so proud that I could scarcely refrain from tapping my neighbor on the shoulder and saying, "They are our bees, and I bottled that honey!"

Florence protests, whenever she helps with the honey, that it is a shame to take it away from the bees when they have worked hard all summer to gather it. Her father insists that the bees owe him their surplus for the rent of his hives and the care he gives the inmates. He always ends the argument with a twinkle in his eye as he says:

"Besides, doesn't everything in the world exist for man's particular use?"

He knows that that will start me off; for of all the illogical and conceited man-made theories, that one seems to me the worst, which insists that nature is made for man. We have only to look about us to see how each species is struggling for its own existence, each one ruthless in its disregard of every other species, and, if need be, preying upon other species. I suppose the advocates of the theory that the world has been evolved for man reason that, since man likes honey and robs the bees of it, the bees exist solely to make it for him. They get it from the nectar of flowers; therefore the flowers exist to produce nectar for bees to take, to make the honey for man! The flowers grow in the soil; therefore soil exists to nourish the flowers, which produce the nectar, for bees to take, to make the honey for man! If the soil were not warmed by the sun, the flowers would not grow; therefore the sun exists to warm the soil, which nourishes the flowers, which produce the nectar, for bees to take, to make the honey for man! Doesn't it make a good House that Jack Built? To follow such reasoning to its logical conclusion, if our tiny sun exists for man's sole benefit, I suppose all the other suns in the universe, that we call stars, the light from which takes years to travel to us, exist to make our sky beautiful at night! Man is a modest creature!

I did not mean to give you such a dissertation, but even in would-be scientific papers I have seen the nature-exists-for-man theory and it always heats me. To think of puny little man taking such a theory seriously in the face of the great facts of nature! Bah!

When I began this letter I meant to tell you about Rob's plan for educating the public—meaning our town—to like dark honey. Do you remember exclaiming over the delicious flavor of that tulip poplar and locust honey when you were here, and wondering why you never saw any on the market at home? That set Rob thinking. He has always contended that clover honey is little better than some of the darker honeys, and that to put up the white color as a standard is arbitrary and artificial. Next Monday when the county fair opens, in addition to the honey and bee exhibit that Rob is going to have, he wants the girls and me to go in white dresses, with white aprons and caps, to hand out samples of as many different kinds of honey as we can get, on crackers. We are to have a color scale of honeys on the table to use in the demonstration. The girls think it will be a lark for we will see everyone we know and many that we don't.

So think of us on Monday in spotless white, telling men, women, and children how good dark honey is and passing out a little dab on a cracker! I wonder what kind of demonstrators we shall make. I wish you could be here to help.

Yours deep in the bee business,

Mary.

FROM THE FIELD OF EXPERIENCE

Bee Paralysis or Isle of Wight Disease

Early this season certain indications of disease began to appear, altho at that time they were not recognized as such. At one time I remember mentioning that it was strange to see so many old worn-out bees so early in the season. Still there were really no great numbers, and the matter was soon forgotten. Again we saw a queen and a few of her bees that apparently had a headache, for they were rubbing their heads most energetically. Later we noted a few bees being pulled out at the entrance at a time when there was no evidence whatever of robbing, for honey left exposed for several hours was not touched by the bees.

When visiting one of our yards, July 16, we immediately decided that the bees had paralysis, for we found several colonies with a lot of bees crawling about, bunching here and there in the grass for five or six feet all around the hives. A little distance from the entrance the grass was several inches high, and bees could be seen laboriously climbing the grass only to tumble back helpless before reaching the top or just as they attempted to fly. On a closer inspection one could see that some of their legs seemed paralyzed, and were simply dragged along as they crawled. Some were quite dumpish while others tore about at an amazing rate. turning this way and that, rubbing their bodies, heads, and legs, in so frantic a fashion that sometimes they lost their balance and fell headlong. A few were seen to hop in their efforts to fly. If they could only succeed in getting a start some could fly right off, and others would fall after flying only a few feet. A few had their "feathers" entirely worn off and were quite black and shiny; others—in fact, nearly all —were quite normal in appearance, and not one was noted with distended abdomens. At one hive we saw at one time as many as fifteen or twenty struggling bees being tugged at and unceremoniously hauled away. I picked up a few of these, and, by the way, found the stinging apparatus in perfect working order. After watching these I saw that they became dumpish; but when breathed on they again went thru their wild antics. Some would repeatedly raise their bodies high up, and, with their front pair of legs, appear to be pulling their tongues out to an amazing length. After becoming exhausted, they would let their heads fall forward, rolling a little to one side and resting upon their mandibles. The well bees paid no attention to them after removing them from the hive; but the sick ones apparently found some comfort in each other's society and would bunch together, sometimes using their antennae to go over each other's bodies, especially over the heads.

We read all we could find on the subject, and came to the conclusion that no one knows much about it, but that, so far, it has never proved very serious in the northern states, and would probably disappear of its own accord as soon as warm settled weather arrived. However, two colonies were so badly affected that the odor of dead bees could be noted several feet away. So we sprinkled sulphur on the dead bees in the grass and also treated one colony with sulphur. Whether this did the slightest good I cannot say; for with the advent of warmer weather all the colonies began to improve and were practically well again in about three weeks.

The above description applies only to the worst cases; but all of our 300 colonies showed some slight trace of the disease. We sent a diseased queen and a few of her workers to Dr. Phillips for experimental purposes. He said he could learn nothing from the bees, but had introduced the queen and would watch for further developments.

Wondering how extensively the disease had spread, we visited most of the apiaries near us, and one as much as twenty miles away. Five of the yards contained from about 20 to 105 colonies each, one apiary being composed amost entirely of Italians. Yet we found each colony more or less affected, altho only two of the beekeepers had noted anything unusual in the behavior of the bees. If inspected late in the afternoon, one would not be apt to notice the symptoms, in mild cases. But on a bright day, an hour or two before noon, the disease appears to show up at its worst.

Now as to results. We did not lose a single colony, and in only one apiary did we lose any appreciable part of the crop because of the loss of bees.

Our bees have been more cross this season than ever before. Even in the height of the honey-flow, when no bee would touch exposed honey, they would sting most viciously. Since the season, by careful manipulations it is possible to open one of these same colonies without smoke and yet find them quiet on the combs and not at all inclined to sting. We wondered whether the disease could have anything to do with this characteristic. Iona Fowls.

Oberlin, O.

FROM THE FIELD OF EXPERIENCE

Do Bees Rob?

Robbing is an infraction of a moral law, constituting a felony. The bees know no law except that of instinct, and they unconsciously follow it, yet they are guided entirely by that instinct. Langstroth says (edition of 1870), "Bees cannot under any circumstances resist the temptation to fill themselves with liquid sweets." No more clear explanation as affecting their actions in this line could be given. This irresistible force that compels the bee to be constantly on the search for sweets does not confine their efforts to gathering nectar from flowers alone. They enter the hives of weak colonies when there is little to be had from flowers, and that is why them are accused of robbing. When nectar is abundant one may leave honey open in the apiary all day, and they will not molest it, for they are displaying the same energy in gathering nectar that they would in taking up honey from an open bait during a dearth of nectar.

Nature may have a hidden hand in directing bees from one hive to enter another. When a colony is no longer able to protect its stores, it is natural for a provision to be made that will enable the honey to be saved to other bees, rather than to enemies of the bee. In this provision the bees of a colony at the first sign of weakness are subjecting themselves to enemies of the bee, and to offset this the hive is entered by other bees and the available sweets are saved.

So beautifully are many of nature's ways worked out that the real object is concealed from the mind of man, and in many cases our troubles with the bee is only our failure to see the true course of nature.

The queenless colony has no hope from nature after all possibility of requeening is passed; the colony is on the decline; and without the aid of man it must die. So why should not instinct lead other bees to save that which their neighbor is too weak to care for, and place it where it will be saved?

Man is the chief offender in causing bees to go wild for sweets and attempt to enter other hives for it. If they were to follow their natural tendencies as provided by nature the cleaning-out of weak colonies would not excite them to so great an extent. But man comes along, tears off the lids of their hives, leaves honey exposed to their sight and smell, and excites their nature for acquiring sweets by the only source available, even to the entering of other hives. So they are called "robbers."

P. C. Chadwick.

Beekeeping in the Island ot San Domingo

About the middle of the seventeenth century, Captain Count de la Croix introduced the first bees from Martinica, and these were European bees, or, to be more precise, German bees. They multiplied very rapidly; and before long the sale of honey and wax became one of the main industries of this island, first of the Republic of Haiti, at that time in the hands of the French, and later on in the remainder of the island. Beekeeping was developed more especially in the provinces of Barahona and Bani in the southern part of the island, Higuey in the east, and Monte Cristy in the north. Beekeeping was practiced in the most primitive manner up to about fifteen years ago. The colonies were simply placed in open barrels, made from the trunk of the royal palm, and little or no attention given after that except to extract the honey and wax twice a year. This was also done in the most primitive manner, many bees being killed in the process. There are still many of these antiquated hives to be found, especially in the south and north, but modern beekeeping is finding its way very rapidly into the most remote corners of this republic.

About thirty years ago a German first began to introduce the modern system of beekeeping in Puerta de la Fe, but did not obtain very satisfactory results, and abandoned the project. Some time later Mr. Alfredo Pellerano, in Manzano, made another attempt in this direction, but this was likewise unsuccessful. About the same time a friend of mine started a modern apiary on a small scale in Puerta Plata, using Italian bees, but this met the fate of the others.

The first successful modern apiary was started in 1903 by the writer; and altho this has suffered many hazards, modern beekeeping has since then been firmly implanted in this republic.

In the beginning, of course, we had considerable difficulty, inasmuch as we did not even have any books on beekeeping in the Spanish language; but this difficulty has now been overcome, and the beginner, in these days, finds it very much easier than did the pioneers.

In my next article I shall take up in detail the state of the beekeeping industry in this republic at the present time.

Santo Domingo. Geo. Pou.

FROM THE FIELD OF EXPERIENCE

Apiary of J. A. Siejas, Santo Domingo, Dominican Republic.

Apiary of Pedro A. Bobea, La Vega.

FROM THE FIELD OF EXPERIENCE

The Evil that Men Do

"H. C. L." was not talked about then. We had it with us, to be sure; but they had not caught the bug and identified it, and given it a yard-long name. But we knew we had *something,* because the payments on our home-mortgage came to an abrupt stop, whereas previously a comfortable little lot of digits were annually knocked out of the principal. It was about then, no doubt, that I informed Madame that I had at length made up my mind firmly to keep a bee.

In the beginning it was just a fad to the alien's mind. What dreams I had I kept to myself. Even the "family" knew only that I found much time to spend up attic where the bees were (for details see GLEANINGS, page 355 for May), and produced from that abode of the gods divers pounds of delicious honey. When that time came I was cordially invited to invent a few more fads of like proportions, and family armed neutrality (with the accent on the armed!) vanished like honey-on-the-pancake before the five-year-old. So I made up my mind to branch out and attempt a serious increase in the income of the clan by the honey route. I fitted up an attic room for six or eight hives, and actually installed four by purchase and swarming. If one strong colony could net me 140 pounds of comb honey in one season, half of which we ate and the other half sold at 25 cts. per pound without the least trouble, either for eating or selling, four hives would net more than that proportion; for 70 pounds was all we could get away with ourselves in one year. So I devoted that summer to the building up of mammoth field forces for next year's campaign; coddled them thru a bitter winter; fed them thru an abnormally late spring, and saw them hie forth in a solid stream on the first warm polleny day of spring with a heart of joy. The sun was shining. The tops of the sugar-maples gleamed with ruddy fire. All the world was atune to its fair influence. So was an Irishman.

Night came, and with it quiet. It was too quiet. I became uneasy, and with a lantern went skyward three steps at a time. A couple of dozen bees were in sight as I lifted up the outer board and peered down thru the net screen. Where were the bees? Next day, in grief and wrath, I found them. They littered the ground round about those maples—dead, to the last bee. What had happened? Why, it was in the early part of the great Massachusetts moth-war. An Irish tree-guardian had taken the opportunity when those maples were in full flower to spray them all heavily with arsenate of lead. That was all. Redress? Bless you, no. It was a city affair. "If yez want to kape bees, mister, kape 'em at home."

Now, I knew an alderman who was good. There are such. I went for that alderman. I talked to that alderman. I instructed that alderman in matters of flower, pollen, bee, fruit, which is the simplest A B C of nature round us, and made a *pro tem.* impression. He promised that "next year" things should be run differently. They were. Meanwhile I was minus four big colonies, and minus hopes of reducing any mortgage in the near future. I had to begin again! So, after some time was lost about it I started with one more colony, beginning again on the ground floor; and by fall I had that one built up to size, and a smaller swarm alongside. Once again I had a winter of high hope; and, secure in an alderman's promise, my visions of wealth waxed with the lapsing days. Spring came; the maples reddened; the bees made bee-lines thither till the air smoked with their speed, and they came back rejoicing with their thighs yellow with much bee gold. The queens were on their jobs in both hives. Soon there was a dancing, golden mist in the sunlight before each entrance where the young bees were learning aviation. It was June, and both hives were crowded to the doors with young. Then came a day.

The old bees—to a bee—hummed their way to a woodland near by. There they stayed. That morning that Irish tree-sprayer had been abroad. In the open, every dandelion, every clover-blossom beneath each tree, was drenched with the poisoned shower; and in the woods, not a jewel-weed, even, was left in the underwood unvenomed. He was thoro, that Irish individual. So is the devil. How close the kinship be, I do not know. One thing more I know, however. A big market-garden next to that wood was heavily planted to beans. If the owner got his seed back he did better than I think; for not a wild wasp or fly came out of that wood to that bean-field alive after that spraying. Again I sought our city fathers, and urged that the spring spraying ought to suffice before the flowers were out in the forest, provided the workmen had been faithful at their mothwork in the fall. There was some overturn in politics about then, and our Irishman was fired. More consideration was promised to us beemen for the coming year; and, be it known, others there were who lost three times as many as I did, and could afford it better, for that matter, when all is said. So, once again I began at the bottom of my bee-ladder and slowly started again to climb.

Perhaps the forestry folk were considerate, or meant to be. I did not get a chance to learn; for the fired Irishman set up for himself as a sprayer-by-the-job, and once again I lost what bees I had. Remember, too, each time my hives were simply crowded with young, all of which starved to death for lack of bees to nurse them.

Right there I gave it up. It was too heartbreaking. So to this day, in the late fall the forestry folk go thru the land spotting egg-clusters and clipping wintering nests of moth; and in the spring they spray; and in June they spray again, and in that June spraying they end all hope of honey-work for me.* There are others who are not near woodlands; and for them there still is hope and stores of honey. I see their happiness, and rejoice with them that the earth is not all evil—only in spots thereof. But as to that—did you ever read of a certain most beauteous and amiable lady of high degree surnamed Macbeth, and her terse comment concerning a certain spot? One Shakespeare reported it, 'tis alleged—tho some deny it—and anyhow 'twas most ungentlemanly of him or somebody—to listen. However, she said it. Nuff ced.

Boston, Mass. John Preston True.

* * *

Just Jerk 'em Off

That P. C. Chadwick should express surprise at Louis H. Scholl's ability to jerk off 40 pounds of honey per minute certainly astonishes me. Several years ago I worked a few days with Mr. Scholl and have since adopted his management thruout, except the shallow divisible-brood-chamber hive. I see no reason in the world why a person should spend a minute to take off a 40-pound super of comb honey when he can just as well take off from 20 to 30 supers. Why, in the name of common sense, monkey away so much time, unless it should be to encourage robbing among the bees?

In my earlier years of beekeeping I followed closely the advice given in bee-text books—I have a lot of them—but at different times I lost several colonies by robbing. Then one day I received an invitation from Mr. Scholl to come to New Braunfels, Texas, and see how honey is taken off the hives. Since then I am no longer bothered with robbing.

The hive-covers are jerked off, smoke is blown over the frames, while the hive-tool is forced under the super, and off goes the super on end in front of the hive. These manipulations are repeated with other supers; and before the bees of the first colony know what has happened to them, 20 to 30 supers are off and ready to be loaded on the Ford auto. To save time is the main object. Get the supers off in a hurry, no matter if some queens are carried along. The whole point is to start with your load before any bees think of robbing. Is not this much more simple than closing up hives and smearing them over with kerosene to prevent robbing which you have encouraged with your tinkerings?

Slow driving for a mile or two with occasional stops of a minute or so will clear the supers of all bees unless perchance a queen happens to be present; but even that does not cause me to lose any sleep, for the queenless colony will raise a new queen and these late queens will produce the best honey-gatherers the next season. I have often wished that every single queen had been killed the summer before; for in that case, when it came to jerking off honey there would always be something to jerk.

Last season I increased from 440 colonies to 560; and, altho receiving a low price, I sold over $2000 worth of honey. I have my bees in 16 apiaries from 4 to 30 miles away from home. Last year my wife and I did all of the work and hauled all the honey home on the Ford. At home the old combs were extracted, and the nice white comb honey was all packed into cans, every can labeled, weighed, cased, and hauled to the railroad station—all this without any outside help. Only 75 days were actually spent on the bees and their honey.

Do not fool with bees unless you know how. If you do not know how, come to Texas and learn.

Lacoste, Texas. Louis Biediger.

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* Since the above-recorded tragedies occurred, it is but fair to add that the city forester has made efforts to spray with a mixture that is repellant to bees. I understand that it has had some success. A considerable proportion of the bees were repelled by it and escaped the poison—not all, by any means, but enough to encourage further experimentation.

FROM THE FIELD OF EXPERIENCE

Tapping a Bee-tree in Australia

One morning, knowing of a swarm of bees that were in a gum tree, a friend and I started out to get them, armed with smoker, ladder, rope, and kerosene-tin. The ladder being barely long enough, we secured the top by passing the rope around the tree and then proceeded to cut the combs out one by one. In the early part of the previous year my friend had removed some bees from this hole, and in doing so had cut an entrance almost as big as the hole itself. Later in the year this swarm had taken possession and built comb right across the large entrance, and there they had been all the winter, with the wind blowing directly on to the combs. It speaks well for the mildness of the Australian winter and the hardiness of the bees that they should have survived such an experience. Unfortunately we found them suffering from foul brood. The open-air life had evidently not made them disease-proof.

Having placed the combs in the kerosene-tin, the next problem was to get the flying bees into it, as, after driving them from the hole with smoke, they clustered on the tree-trunk at the top of the ladder. I held the corner of the tin containing the combs close to the bees, and the bulk of them marched right in. We left the tin with combs at the bottom of the tree so as to collect the flying bees. Later we destroyed the combs and ran the bees into a clean hive.

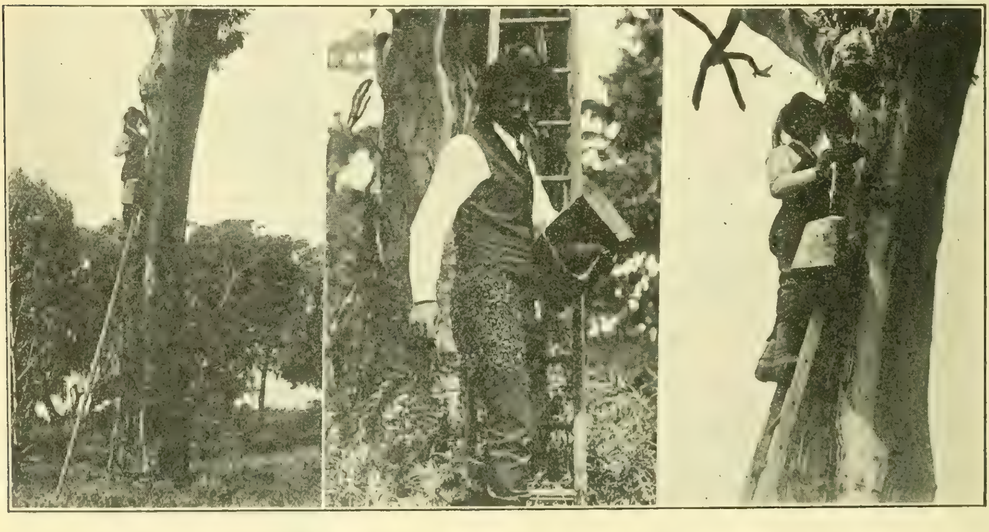
Melbourne, Australia. B. Blackbourn.

Is Honey a Luxury?

The honey salesman occasionally hears that "honey is a luxury which ordinary people should use very sparingly, especially in times of high prices." If this were true, there would be reason in the argument. But honey is *not* a luxury, and it should be the business of all those interested in real food economy, as well as those engaged in the honey business to make known the truth.

According to modern standards of efficiency, two factors enter into the classification of an article of diet as a luxury—viz., price and food value. However low the price, if there is little or no food value, any article is a luxury. Probably the average person would hardly think it possible for cabbage to be called a luxury; but one of the recent prominent writers on the subject of food values says, "Only the rich and improvident can afford to pay more than a cent and a half a pound for carrots, turnips, cabbages, and squash." That statement was published in a book two years before the time when cabbage rose to the sublime height of fifteen or twenty cents, so that it was under perfectly normal conditions, that this conclusion was reached. What is the truth, then, about honey?

1. Price. Not long ago I was confronted with the statement that a few years ago the father of a certain merchant sold honey at ten cents a pound, retail (at the time in question it was selling at twenty-five cents). I simply cited the fact that less than twenty



Taking bees from a gum tree in Australia.

years ago my father sold eggs in his store at ten cents a dozen; but at that time eggs were selling at about forty cents; so unless eggs are considerably higher in food value than honey they should be classed as a greater luxury than honey.

In regard to the price of butter, much the same situation prevails. At present butter is retailing at nearly twice the price of honey. In fact, a pound of the best comb honey can be bought as cheap as oleomargarine. For some time during the last winter honey was actually cheaper than "oleo."

The facts are that while the prices of most things have been soaring from fifty to three hundred per cent during the past year, honey did not advance at all for many months; and the retail prices even now have not been raised in proportion to other foods. On the basis of price alone, however, no decision can be reached, and we must, therefore, turn to the consideration of the other deciding factor—

2. Food value. Perhaps most people think that in the "land flowing with milk and honey" the milk furnished the substantial part of the diet, and the honey was simply dessert. It might be of interest to all such to know that the food value of honey is more than four times as much as that of milk, so that honey is not only one of the most delicate and delicious of all foods, whether natural or manufactured, but it also excels many if not most of them in actual food value.

Scientific investigation during the last century has resulted in a great change in our understanding of foods and the purpose of eating. It was formerly supposed that food was taken almost entirely for the purpose of rebuilding wasted tissues. But it has now been proven that the body tissue wastes only three or four ounces per day, and the amount is practically the same whether we rest or work (see "The Nutrition of a Household," pp. 16, 17, by Brewster). Now, if we needed to eat only to rebuild this waste tissue, a very little food would be sufficient. But C. Stanford Read, in his book, "Fads and Feeding," points out the importance of another purpose of eating, which is, to produce heat and energy. He says the importance of this purpose is apparent when we realize that, "Whereas the body may waste for a lengthened period and yet live, it rapidly dies when the source of heat is removed or even greatly lessened."

Again, on this same point, Brewster (p. 16) says: "The starches and sugars, principally, which appear in only a small quantity in the substance of the body, are the real nutrients which do nine-tenths of the body's work. They are taken into the living tissue, exploded, thrown out again and renewed, almost as rapidly as the gasoline vapor in the cylinder of a motor car. Modern science and immemorial experience alike testify that what counts in food is its fuel value." As Mr. Brewster puts it in another place, "We are built of flesh; but we run on sugar, precisely as the simpler engines of the automobile and motor boat are built of steel and run on gasoline. We continually use up and renew a substance of which the body at any single moment contains very little; so that, like any other explosion engine, we use up our weight of fuel many times over before we wear out our substance."

From these statements it is very evident that fuel value is by far the most important factor in determining food value. On this score we need have no fears for honey. A glance at the following table will show that it compares favorably with some of the most common articles of diet, and considerably surpasses some which the average person would pronounce indispensable necessities:

Bread	1216 calories per pound
Eggs	720 calories per pound
Milk	320 calories per pound
Molasses	1225 calories per pound
Maple syrup	1250 calories per pound
Strawberries	200 calories per pound
Honey	1420 calories per pound

The average person requires 2000 to 2500 calories per day to supply needed heat and energy, so that it will readily be seen how near a single pound of honey would come to meeting the requirement. I am not advocating the exclusive use of honey, however. But there are some advantages about honey, besides its high fuel value. First, it is a fact that honey contains about 75 per cent of dextrose and levulose, two forms of sugar which are taken into the blood without requiring digestion. For this reason quicker results may be obtained with honey than with most other kinds of food. Ordinarily it requires about 150 to 200 calories to digest the food we eat each day. For this reason honey would have an even higher food value than would at first appear, for none of the potential value would be lost or used up in digestion.

To draw conclusions, we have but to return to compare eggs and honey, for instance, in price and food value. Since the fuel value of honey is twice that of eggs, and the price of eggs is nearly twice that of honey, it is not hard to see which is the real luxury. In the case of butter, the fuel value of honey is not much over half that of butter, so that at present prices there is little choice between the two; and since both are high in food value they cannot properly be classed as luxuries. Comparing honey with lean meat, it would take more than two pounds of meat to furnish the energy of one pound of honey.

Warren, Ohio. JAMES A. BROWN.

[While Mr. Brown's article is in the main true, it seems to me it might be misleading. Honey is the finest and most healthful concentrated sweet in the world, but we must be careful not to claim too much for it. A perfect food must contain all the nutritive elements of the body—proteins, carbohydrates, fats, minerals, and water, in their proper proportion. Honey is a highly concentrated source of energy; but one should be careful not to seem to advise its substitution for other valuable foods. Most of us need more bulk in our diet to regulate body processes. It is all right to substitute honey for candies, marmalades, jellies, and sweets generally; but be careful not to lead people to suppose that alone it is a perfect food for human beings. Combined with whole-wheat bread and milk it makes a well-balanced meal.—STANCY PUERDEN.]

An Ideal Location

I believe this apiary, only one-third of which shows in the accompanying photo, is as nicely located as any that can be found. The place is protected on all sides by evergreen trees, and, further back, by mountain ridges. Last year we wintered without packing. The entrances face the east, and the earth is banked up around the hives to keep the cold wind from blowing under them. On the east is a large mountain which is a great help, for during the winter months it keeps the sun from shining on the hives and thus tempting the bees out when it is too cold.

For advertising our honey we use this photo with the inscription: "This is the Apiary that Produces the Famous Skougard Honey." These pictures are placed in store-windows and other public places, where they attract much attention. When enlarged and painted in natural colors they make the best advertisement we ever used.

To dispose of the crop we believe in advertising until everybody about you knows about the honey. It pays to satisfy customers, even if money is apparently lost in doing it. Satisfy one customer and thus sell a hundred gallons of honey to his neighbors. Honey is selling here now at 45 cents a quart. Four years ago it was 4 cents a pound. Twelve cents a pound is the average for this crop. M. L. SKOUGARD.

Parowan, Utah.

Where all conditions are ideal for the bees.

FROM THE FIELD OF EXPERIENCE

Hives and Methods Applicable to the South

Beekeeping in the South offers peculiar conditions, and is an entirely different proposition to that of the more northerly states. The beginner naturally reads and selects the methods of the successful practitioners of the North only to find them entirely inapplicable to southern conditions, and practically all of the literature is by northern authors unfamiliar with conditions which confront beekeepers in the South.

The very beginning of the season presents a difference; and while the man further north is putting his bees out of the cellar, or unpacking, the southern man finds his hives boiling over with bees, and he is face to face with the swarming problem which is followed by steady brood-rearing until as late as October. So it is evident that methods must be adjusted to different conditions.

The beekeeper in the South who tries to use the contracted brood-chamber or even the standard brood-chamber is doomed to failure at the outset. The bees must be fussed with continually, and he finds that the methods of forcing the bees into the super generally force them out instead. The key-note of success in the South is the plan of having an *unlimited* brood capacity, which is the only way a man giving but part of his time to the apiary can be successful.

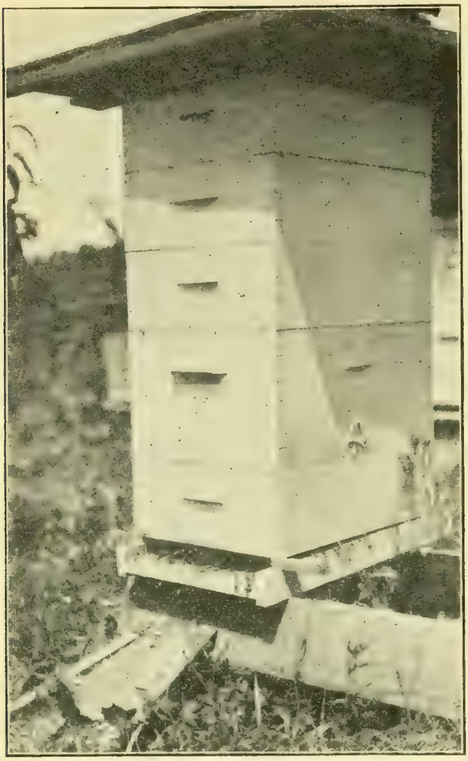
The 10-frame Jumbo hive, the ideal hive for southern beekeeping, in practical use in the town lot apiary of L. E. Webb, Morganton, N. C.

The divisible brood-chamber hive. Both the shade-board and the extra ventilation are important.

Getting bees into the supers offers no trouble if during the long breeding season the queen is given unlimited room. Why, the way they pour into the supers is a revelation. And with our breeding conditions, the queen, if given room, will put tremendous colonies in the supers; otherwise she will worry one with swarms thruout the year, regardless of manipulations, unless they are so radical as to be impracticable.

Three methods are adapted to southern conditions as proven by careful tests; the use of the ten-frame Root Jumbo hive; the divisible brood-chamber under a modified Scholl method, using three shallow bodies permanently for brood and shifting the top

FROM THE FIELD OF EXPERIENCE



The story-and-a-half brood-chamber (Wilder method).

one (or sometimes the middle one) to the bottom at intervals of about ten days or two weeks; and the use of the 1½-story or shallow-super addition to the regular body, shifting occasionally on the J. J. Wilder plan.

The shallow divisible and the 1½-story plans give splendid results, having only the drawback of considerable heavy lifting, especially when supered, while the Jumbo colonies peg along with their tremendous force of workers thruout the season, asking only for super room, requiring no fussing other than to keep them with good queens.

The fact that there are so many wild black bees in the woods in many sections of the South makes it far more satisfactory to buy queens from breeders guaranteeing pure matings than to have the trouble of replacing many mismated queens of one's own rearing.

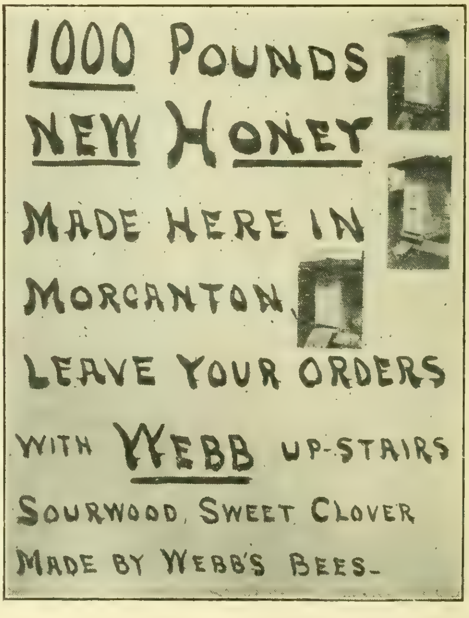
More bees die of starvation in the South than in almost any other section of the country, and this usually occurs late in the spring during cool rainy spells after brood-rearing has well advanced, and often when the bees are nearly ready to swarm. So the standard hives often make feeding necessary, but the methods shown eliminate all that worry.

Aside from the advantages mentioned, a still greater advantage is the excellent wintering and heavy spring brood-rearing resulting from the colony having room for almost unlimited stores, which is the greatest asset to the business.

The accompanying photos are illustrative of the methods mentioned. The hives were supered according to requirements at the time (July 16) for the production of section and chunk comb honey in combination supers.

Likely conditions in other sections of the United States are such that beekeepers would call these methods inapplicable; and many will do so without sufficient tests, as it seems beekeepers as a class are prone to stick to a set rule, even when something better awaits them. In fact, it seemed to me at first like a radical variation from the standard methods; yet I consider my decision to depart from the standard methods to be worth infinitely more to me than everything else I have done.

Morganton, N. C. L. E. Webb.



Webb's method of selling honey. This is put in a prominent show window, together with supers of honey and extra sections. By means of this display, he sold over 1400 pounds or honey in three days.

SIFTINGS

J. E. Crane

BULLETIN 471 of U. S. Department of Agriculture is very enlightening on the subject of sac brood. It is decidedly comforting to know the virus causing the disease loses its vitality in water or honey or in the combs in about a month, and in even less time in fermenting or putrefactive liquids or in the sun. While we should like to know how the life of the virus is carried over the winter, the facts as shown in this bulletin will be helpful in combating this brood disease.

* * *

One of the unique things about beekeeping is that we are always meeting with some surprise every year. The present season was the latest known in more than fifty years. There are never two just alike. Then some year a plant we had thought worthless to the beekeeper will give a most surprising yield of nectar. One year a thunder-shower or a north wind will check the flow of nectar, while in other years it seems to make little difference.

One of our surprises this year was a yard in a new location that had given a great yield of honey-dew. While other yards were giving us snowy-white combs of clover honey this one had most of its combs white and handsome on the outside, but filled with what looked like a pale ink. Two tons of honey-dew in sections is not pleasant to think about, but it can be extracted and kept for spring feeding, and the combs melted will give us 125 pounds of choice wax. All together that yard, with present sugar prices, will give us a good profit. In more than fifty years this is my first experience with honey-dew in supers. Of course, it was something of a surprise.

* * *

Bee inspectors for a long time have recognized the probability of the spread of European foul brood by bees entering a nearby hive. Indeed, finding one hive in a yard with the disease well advanced, and a number of hives in the immediate vicinity in the earlier stages of disease, seems almost sure proof of it. I have found two or three such groups in a large yard. But when we find a single colony in the earlier stages of the disease at the further end of a yard or perhaps in a neighbor's yard a mile away it has seemed a little doubtful if that could be the way the disease had spread, and yet it has been thought possible, but very difficult to prove. On page 528, July, Mr. R. F. Holtermann gives some facts he had picked up while visiting New York beekeepers, which seem to prove that such is the case. Golden Italians were introduced into a yard where there were hives badly diseased. Mr. Stewart, inspecting some four miles from this yard, found some of these yellow Italians among black bees, and traces of disease. He had no doubt they had come from the diseased apiary four miles distant. This seems to me a most valuable addition to our literature on this subject.

* * *

"Handsome does, so handsome is." See cover page of Gleanings for August. I can not quite agree so far as buckwheat is concerned; for a field of buckwheat as it grows in New York or the southwest corner of Vermont is a beautiful sight. It even surpassed a field of clover in the multitude of its tiny flowers, and it would be just as beautiful if it gave us no nectar.

* * *

We had a fairly good flow of honey from clover during July, and a good crop of honey will be harvested in western Vermont—as large, I think, as last year. The quality is fine as a rule, altho some dandelion was carried up into supers the first of the season in some yards.

* * *

I don't know just how to express my admiration of Stancy Puerden's vigorous words of protest at the criminal blocking of the food bill by senators who ought to know better. Is there anything in all the world that so fools a man as a liquid with a little alcohol in it?

* * *

Careless grading never pays, says G. T. Stark, page 594, August, and he is right. Every section in a case should be as near the others as possible, and there should be marks on the outside that will tell what to expect.

* * *

One of the pleasures of yesterday was the good news that the U. S. Senate had passed the long-longed-for prohibitory amendment to the constitution. Hurrah! Surely "the world do move."

* * *

Boy Scouts render excellent assistance in the care of bees this year when help is so scarce.

STRAY STRAWS

Dr. C. C. Miller

It would be a great thing if every one could be induced to use honey in place of sugar in hot drinks. Allow that only half the population uses hot drinks, and that each one uses only one ounce of honey daily for sweetening, it would take more than three million pounds of honey to fill the demand. The great thing in that is not the amount of honey used, but the amount of increased health and vigor of the people. You, my reader, probably cannot do a great deal toward securing a national custom of that kind, but you can follow the custom in your own case, and the benefit to you will be just the same as if the whole nation were at it.

"With extracted honey bringing more per pound by the carload than comb by the single case, we see little encouragement for the comb-honey man. Better run everything you can to extracted. Probably it will pay you to extract the bulk of your section honey also, saving the combs for next season. The editor has a hundred cases or so that he proposes to treat in just that way. The honey, wax, and probable increased cost of sections and starters next season will far overbalance the labor, at present prices. Looks wicked, but will pay."—Editor Bixby in *The Western Honey Bee.*

I have just finished reading "Happy: the Life of a Bee;" and after reading again the notice of the book, page 568, July Gleanings, feel moved to say to the writer of that notice. "Don't you think that the beautiful manner in which the book is written has beguiled you into being a bit too charitable when you characterize as 'poetic licenses' statements that are decidedly *not* 'scientifically true as to facts'? To make a book interesting is it only necessary to fill it with errors? Take this: According to the book, before the old queen issues with a prime swarm her successor leaves her cell and is fertilized. Do you really think 'the interest is not lessened but rather increased by the poetic licenses' of that sort? If so, what a chance for adding interest the author missed when he didn't say that the drones lay all the eggs"!

G. M. Doolittle, you say, p. 604, "Now, the white capping of combs takes much more wax than that transparent capping the dark Italians use, where the combs in sections look so watery and uninviting." I wonder whether nice measurement would really show any difference in the thickness of cappings. At any rate it has generally been understood that white capping was because a film of air was left between the honey and the capping, while in watery capping the honey was filled up against the capping. You know that the whitest capping becomes watery if kept in a place where the honey absorbs moisture, and I suppose that's because honey takes the place of the film of air.

Paralysis. E. G. LeStourgeon, in *The Beekeepers' Item,* defends with vigor his theory that paralysis is caused by soured nectar. He says: "Only nurse bees seem to contract the disease.....We have repeatedly cured the disease in widely distant places by removing the bad stores or by providing food that was wholesome—and we have been able to produce typical cases by feeding fermented syrup at a time when the nurse bees were obliged to use these unfit stores for the preparation of food for the larvae." Mr. LeStourgeon seems a candid sort of man, and the cure is so easy—just give abundance of wholesome stores—that it is surely worth trying.

"Will bees start queen-cells above an excluder with or without supers between?" is a question, p. 632, and Miss Fowls refrains from replying, because "so much afraid of Dr. Miller." I may be dangerous to some folk, Miss Fowls, but not to you. I like you. If I had been asked that question a year ago, I should have replied that rarely would cells be started over an excluder with a laying queen below. But this year I've used the Demaree plan with nearly all colonies, and in about every case cells galore have been built above. All but one brood was raised to the third story, with no brood in the second. If the brood is in the second story, I think cells will not generally be started. It makes little or no difference whether cells are in the first story.

E. S. Miller says, "If you have any European foul brood around, frequent examination is important. It should not be permitted to get beyond a few cells. If a hive is found with, say, half a dozen bad cells, treat it at once in this way: Remove the queen and mark the hive. In about ten days use the hive-body, bees and all, as a super on some strong colony with queen-excluder and a sheet of newspaper between. See that there are no queen-cells. I am presuming that your bees are Italians. In this way I was able to get rid of all European foul brood several years ago after having it in worst form."—*Domestic Beekeeper,* 266. That looks like a nice way to do when there is no objection to having one less colony. Treating the case early is excellent advice. Some have reported success by merely putting all brood above an excluder, leaving the queen below with empty combs or foundation.

The *British Bee Journal* is running a beautifully written serial, "The Life Story of the Honeybee," by Oliver G. Pike, F. Z. S., F. R. P. S. On page 31 occurs the statement concerning the worker that "her time is short, three to five weeks being the extent of her existence in summer, then she dies worn out by work." For more than a half a century six weeks has been the agreed life of a worker in summer; but do we know positively anything about it? When so good authority as the *British Bee Journal* cuts down the time one-third, it is desirable that we should find out about it. My guess would be that six weeks is a little too long, and three to five a good deal too short.

On the same page occurs this concerning the death of the worker: "Over-worked, weary, and worn away by ceaseless labors, she just reaches her home, fails to enter, then falls dead or dying on the threshold of the city she has lived and worked for." I balk at that. If true, there ought to be at least a thousand bees dying at the entrance of a strong colony daily. Did you ever see a hundred? But where they do die has always seemed a mystery to me. Few dead bees are seen, yet millions die in a summer from a large apiary.

From the financial columns of the Chicago *Herald* I learn that business men are discussing the effect upon the candy business of prohibition during the war. The sale of candy is immense. The statement is vouched for by an investment banker, "that in Chicago, the greatest meat market in the world, more candy than meat is consumed." The dry movement in the western and southern states, where liquor has been abolished, has resulted in a large increase in candy and chocolate consumption. It will be the same all over. Pure-food laws "gave the candy industry the first great impetus; but the second great incentive, no doubt, will be due to the fact that candy is a natural substitute for alcohol." Will not all this help at least a little the sale of honey?

C. E. Fowler, you say, p. 610, "I propose that, instead of breeding from the best swarm or from the best strain, we breed from the best swarm of the best strain and leave the scrubs alone." If you do that you're all right; but why muddle the beginner with any such advice? If he has two strains in his yard, how can he tell—how can *you* tell—to which strain a given queen belongs, so long as you don't know with what drone she mated? And if he breeds always from his best colony, isn't he pretty sure to be breeding from his best strain? I don't believe I can do any better—and I'm not sure you can—than to follow the simple motto, "Breed from the best queen."

Let me endorse most heartily Doolittle's view, p. 523, that for the every-day beekeeper full-sized combs are the thing for nuclei, and that a nucleus with a young queen is the place to get holes in combs filled in with worker comb. [A good point right here: A good many times beekeepers have combs that are good, except the drone-cells in one corner or two or three corners of the frames. These ought to be cut out and filled in with worker comb by the bees, when they will build worker combs. Doolittle's plan would work all right in such cases.—Ed.]

"Here is a scientific fact. No living thing, either animal or vegetable, can live on sugar alone. The reason for this is that, while it contains carbon, hydrogen, and oxygen, it lacks the fourth most important ingredient of protoplasm, viz., nitrogen. Animals *must* derive their nitrogen ready built up for them into protein. There is protein in honey, doubtless in the proportion best suited to the bee."—*British Bee Journal,* 72. There's something to think over for you fellows who think it's smart to replace honey with sugar.

Editor Townsend says, *Domestic Beekeeper,* 218. "It is our invariable experience that the colonies having an abundance of *natural stores* for winter and spring use are the colonies that *produce our surplus honey.* . . . Give us the colonies that have wintered and springed upon natural stores when it comes to rolling in the honey during the surplus flow." That man Townsend has a level head.

Arthur C. Miller, your slogan, p. 600, is all right: "Don't extract the last drop and then feed sugar." You might add another reason why it's a losing game: sugar is entirely lacking in elements contained in honey that are necessary for the health and vigor of bees.

Queens should not be reared until natural swarming begins, as experience shows that queens reared after this time are better than those reared before.—*Schweiz. Bztg.* 240.

OUR FOOD PAGE

Stancy Puerden

A FEW days ago the Puerden family took a rather extensive drive thru some of the residence streets of Cleveland, and so had a chance to observe a number of war gardens. There were many fine ones, and I did not wonder that vegetables were more plentiful, as well as cheaper and better than ever before known in the city. But there were other gardens, so-called, that made one long to change the signs like this:

WAR GARDEN
HELP ~~GUARD~~ IT
FIND

They were plantations of weeds with here and there a sickly vegetable trying to raise its head above the thrifty weeds. The enthusiasm of some people never lasts long, even in war times. I am hoping that every Gleanings reader with a piece of mother earth in his possession has the finest garden he ever had. I should love to take a peep at all your gardens and then another peep at your storeroom shelves and see how much of your surplus you have in cans.

Speaking of gardens, may I suggest that M.-A.-O. tell us something about his early potatoes. I understand there was some ceremony about digging his first potatoes(?), an invited audience of neighbors, or something of the sort. Mr. A. I. Root taught me how to start potatoes in a box of rich soil in the house, with the result that since early in July we have been enjoying the finest potatoes we ever had in the summer, so not all of his pupils come to grief.

I am expecting a polite note from the managing editor, suggesting that he did not engage me to conduct a gardening department; but you must admit, Mr. Editor, that gardens are rather closely related to the food question this year. It will be of no use for me to write recipes if there is nothing to cook.

HONEYED WORDS.

Have you noticed that the Food Administration has requested the railroads to serve honey and syrups as far as possible with breakfast cereals instead of cream and sugar. Dietitians tell us that to a certain extent carbohydrates may replace fats in the diet, and we are urged to save fats wherever possible, as the fat shortage in the world is extremely serious. Here is a chance for us beekeepers (I never kept bees, nor do I expect to, but I have been a daughter of a beekeeper for more years than I would confess. I am the wife of a beekeeper and the mother of a small beekeeper)—I repeat, here is a chance for us to do our bit by serving honey with cereals, on bread, and on all of these war breads and wheat substitute dishes. You will have little difficulty in persuading your children to eat more honey and less fat if your children are like mine. Children take to sweet like bees to basswood on a good honey day. Of course, you ought not to attempt to cut out all fat from the children's diet, but it can do no harm to suggest that they spread their bread very thinly with butter when honey is used; and at dinners where there is fat with the meat it is just as well for the family to use no butter at all.

To illustrate how children like honey, a few weeks ago a lady said to me, "How much honey do you allow your children to eat at a time?" I told her they generally ate as much as they wanted; that I believed appetite was a pretty safe guide in eating honey.

"Well," she returned, "James sometimes eats a whole section at a meal; and while it never seems to hurt him, I wondered if your children ate that much at a time."

I assured the lady that my children never ate that much at a time; and I privately wondered if James, who is a nine-year-old boy, wouldn't some time suffer the pangs of acute indigestion for his greediness. I was relating the incident to my family when my big boy said, "Why, mother, I absentmindedly ate a whole section of honey down to grandma's at lunch last Sunday evening, and I felt fine after it." However, in spite of these two incidents I do not believe a section of honey at a meal is the proper allowance for any one, even if he is a big boy with an appetite to correspond.

SOME OTHER SWEETS.

"Variety is the spice of life," so we must have a few jars of jelly, marmalades, and preserves in our pantries as well as plenty of honey of all sorts. Another reason is that jars of honey, home-made preserves, or jelly make the nicest little gifts to send the boys in training-camps. You see I do not agree with the officer who was asked what the women could do for the boys in camp, and replied, "Leave them alone." A man is never too old to appreciate a little mothering, altho he may be slow to admit it, and many of the boys in the training-camps are so young.

In the limited space at my disposal I do not intend to give full directions for jelly-making, but just mention a few points which you may find helpful in these times of high prices. Jelly may be made very largely of water. Cover the fruit with water when you put it on to cook; and after cooking it long enough to soften so the juice will start easily, turn it into a jelly-bag and let it drip. Many articles on jelly making advise cooking the fruit with very little water, or even none at all. I made twenty-four jars of finely flavored jelly out of four scant quart boxes of currants this summer, and I did not squeeze the jelly-bag either. After picking over and washing the currants, not stemming them, I covered them with water, boiled them until they were soft, and then put them into the jelly-bag to drain. After dripping had stopped I put the fruit back into the kettle, again covered it with water, boiled it about thirty minutes slowly, and turned it into the bag again to drain. Altho I marked the jelly made from the second boiling as inferior, it did not seem to be, either in flavor or appearance. After a part of the juice has dripped thru the bag it is well to start making the jelly, for it is much easier to cook down a few glasses at a time than to boil down the whole amount. The old way was to boil the juice twenty minutes before adding an equal amount of hot sugar, measured before the juice had been reduced by boiling, and then boiling ten minutes more, or until it jellied. You will find you can make jelly of better quality by adding the heated sugar soon after the juice starts to boil. More time is given for the inversion of the sugar by the acids of the fruit, and there is less danger of crystallization. Also you may safely reduce the amount of sugar. Three quarters of a cup of sugar for every cup of juice is ample in most cases, unless you prefer a very sweet jelly. Cook the jelly rapidly, as long slow cooking tends to darken the product, and there is danger of destroying the pectin, the substance necessary for jelly-making.

One of the most reliable tests to determine when the jelly is sufficiently cooked is to take up a spoonful, cool it slightly, and then let it drip from the side of the spoon. If it leaves the spoon in several drops instead of one, or in a thin sheet, it will probably make a jelly of the desired firmness. A little practice will enable you to get it just right. Skim it and pour it into hot sterilized glasses. Save the skimmings for the children to eat on their bread. They like it better than jelly itself. Cover the jelly when cold with melted paraffin, tipping the glass so that it comes up a little on the side.

Currants, crabapples, tart apples, oranges, and grapes are better suited to making a natural fruit jelly than others. Quinces are rich in pectin, but lacking in acid, and better jelly results if they are combined with apples or a small amount of lemon juice. Peaches, strawberries, and cherries are deficient in pectin, but jellies may be made from these fruits by combining with them fruits which are rich in pectin. Also by combining apples with more expensive fruits you may materially reduce the cost of your jelly without injuring its quality.

Here is a recipe for a rich conserve which is fine for sweet sandwiches, as a cake filling, or to spread between halves of lady fingers:

GRAPE CONSERVE.

Three pints grapes; 2⅞ pints granulated sugar; 2 whole oranges ground, rejecting seeds; 1 cup English walnuts.

Pulp grapes and put pulp to cook until seeds are loosened, and then strain. Put skins and pulp together, add sugar and oranges ground fine, and boil about twenty-five minutes. Just before removing from the fire add broken nut meats and cook slightly. Pour into jelly-glasses and cover with melted paraffin when cool. Try this same conserve with peaches cut small instead of grapes, and for variety you may add half a cup of raisins cut small.

I always dreaded catchup-making until a friend gave me this recipe. The thickening shortens that last tedious hour of boiling when it is so apt to burn.

TOMATO CATCHUP.

Half a bushel tomatoes cooked and sifted; 8 onions chopped fine; 3 green sweet peppers chopped fine omitting seeds; 1½ pounds brown sugar; 5 or 6 tablespoons salt; 1 teaspoon ground cinnamon; 1 teaspoon ground cloves; 1 teaspoon black pepper. 2 pints vinegar; ½ cup flour.

The onions and sweet peppers may be put thru a food-chopper, and, together with the sugar and most of the vinegar, should be added to the tomato pulp when it is partly cooked down. When nearly thick enough mix flour, spices, and salt with the rest of the vinegar, and use it to thicken the mixture. Cook until the flour is thoroly cooked, and, if not thick enough, add more flour in the same way. This makes a very smooth catchup.

Beekeeping as a Side Line

Grace Allen

IN Tryon, North Carolina, is a self-confessed "incurable sideliner" who finds this world *"too* full of fascinating things to do"—"and I cannot quite eliminate all but one." Finally, out of bees, greenhouse work, flower stores, vegetable-growing, and orcharding, things seem to have settled into a little market garden with bees as a side line. But this spring her four colonies cast seven swarms, which, of course, is altogether too—but wait. In Robbins, Tennessee, is one colony that cast three swarms, and one of these three cast three, so that this one colony has by natural swarming increased this season to seven. And this, as I was saying, is of course altogether too much swarming, if one is trying to secure a honey crop.

If increase is the one thing desired, and if these multiplied swarms grow to full-sized colonies, possessed of sufficient stores to winter on, well and good, but only if increase is the thing desired. Even then many beekeepers prefer to control swarming and to make their increase some more convenient way. Many allow the first (or prime) swarm to issue, but try to prevent after-swarms. Still others mean to permit none at all, preferring to keep the force of bees absolutely intact if possible. One of the bulletins issued by the extension department of this state begins, "A frequent cause of serious loss in the production of a honey crop is natural swarming. The general practice of beekeepers in Tennessee of allowing their colonies to swarm indiscriminately" (personally I seriously question its being a general practice) "is one of the common causes of a small return in surplus honey. While natural swarming cannot be entirely prevented, it can be reduced to a minimum, and the amount of the honey crop may be more than doubled by the methods of management here described."

* * *

Can you imagine anything more delightful than to drive along a good road near a pretty lake, and come upon a summer cottage with both honey and wild-strawberry jam for sale? Neither can I, except to live in the cottage by the lake and produce the honey and the jam! Doesn't that make a delightful way for schoolteachers to summer? "Richards and McCollum" is the business-like name under which two schoolteachers conduct this pleasant summer business on the shore of Harvey's Lake, in Anderson, Pennsylvania. Thru three months' vacation they work with their fifteen colonies of bees, put their own hives together and paint them, gather wild strawberries, and make them into delicious jam. Then as one of them writes, "September 1st finds us with nerves quiet, health good, and a little cash." Practically ideal, isn't it?

* * *

Enthusiasm and energy are certainly contagious, especially when they go right out into the highways and the hedges and compel others to get energetic and enthusiastic too. Mr. R. W. Etheredge, of Selma, North Carolina, a fourteen-months beekeeper with twenty hives, who declares he studied, not merely read, GLEANINGS and A B C all the first summer and winter, says that whenever he sees any bees thru the country he goes right in and gets acquainted with their owner. Then if the man isn't a member of the association, he sends the name in to the state office, so getting him on a list to be approached for membership, and tries to get him to transfer his bees. This season he has thus persuaded three men to try movable frames, with the inevitable result of their being so pleased that they plan to transfer the rest of their hives in the spring. That's a case of one man doing his bit to advance the industry to the higher plane it deserves. I trust the meeting that was planned to be held in his yard was a success.

* * *

Mr. Clesson Merriman, of Leominster, Massachusetts, calls attention in an interesting letter to the great contrast between the methods of beekeeping fifty years ago, when bees were brimstoned to get the honey, and those practiced today, when progress is the watchword, and books and magazines and modern equipment make so different a business of beekeeping. But nearly as great is the contrast right today between different men. Take Leominster, as referred to in Mr. Merriman's letter. One man, owning five colonies, but no smoker or veil or other equipment, has his bees in old box hives with cracks big enough to accommodate mice, and a piece of blanket for a cover. Thus unprotected, they stand on the cold side of the barn, buried in snow in winter. They seem to live thru it all, however, and do him the kindness to fertilize his fruit-trees, but that is all. Indeed, what more could one expect?

Mr. Merriman, on the other hand, tho he says he is "getting along in years," makes sure in October that his colonies are strong in bees and stores, puts single winter cases over them on their summer stands, and keeps them snug and dry. Last year he carried off first premium on fifty sections of comb honey at the Worcester fair; second on the best ten sections, and first on one quart of pure honey vinegar three years old. Small wonder he thinks it pays to take care of the bees.

Leominster is a little new city, and Mr. Merriman writes that there are about 150 colonies of bees there, of which 25 are his. He has also the only extractor in town, home-made but satisfactory. Being a carpenter by trade, of course he is at a great advantage when it comes to being handy with tools.

Last summer he broke his right wrist, which kept him from his regular work the rest of the season, and also interfered seriously with his bee work. But on pleasant Saturdays he would take long tramps with a neighbor, hunting bees. They located six swarms, of which they destroyed one that they thought diseased, brought home four, and left one standing, to be taken later. The broken arm did not prevent such outdoor exercise—with the neighbor along to help—and it was fascinating work.

Some day I'm going bee-hunting myself.

* * *

Several comments have been made as to the continuous swarming in 1916. In spite of the disadvantages, illness, etc., under which we worked that summer, we held it down pretty well till the latter end of the season. Then not only did we have a few teentsey late swarms of our own, but we have also entertained strange swarms within our gates. One of them, an insignificant swarm of blacks from somewhere unknown, clustered one early morning on a peach-tree in the garden, then broke and clustered again on another peach-tree in the apiary; so we chucked it into a box and set it off in a corner. Presently we set about introducing a few queens; and while one hive was open, quite suddenly we were surrounded by black bees. They were settling on the frames, down the sides of the hive, and all over my skirt and box-seat. Of course they were repulsed, and their queen lost in the fracas. Another time I found the top of one hive covered with an apparently peaceful settlement of blacks, quietly crawling down the front and into the entrance—at least they got that far, but there, of course, trouble began.

A few days after that, the firemen telephoned that there was a swarm right back of their hall, probably ours, as they came from our direction. As I was working in the yard at the time, I knew it was no swarm of ours; but as it was reported to be a good big one, I went over to investigate. In the alley back of the fire-hall, some one had thrown a tin can, not quite emptied of syrup, and that "swarm" was merely a jubilant neighborhood picnic in the alley!

* * *

I read recently of a man somewhere in the West who has 165 colonies of bees, producing $1400 worth of honey in one season. Then I read further, "All work was performed mornings and evenings, with the co-operation of an industrious and sympathetic wife." Do you remember the story of how "me and Betsy killed the ba'ar"? Somehow I have a stubborn fancy that that industrious and sympathetic wife co-operates around those 165 colonies at some other times than just mornings and evenings. I have a further fancy that her name is quite likely Betsey.

* * *

It was Edward Everett Hale, I have read, who first declared that Noah had bees, too, along with his other side lines, and kept them in the ark-hives.

* * *

To Mr. John M. Davis,

Who presented me with a young Italian queen.

What did you give, when you gave to me
This beautiful queen, so graciously?

A life I could crush with a careless hand,
Yet no one at all can understand;
A mystery, shaped, thru world-old laws,
By the God behind the first great cause;
A life come down thru age on age—
Of countless lives the heritage;
A wee, slim creature with wonderful wings—
Such daintily gauzy and delicate things—
Her story a tale for poets to tell,
Woven of words with magical spell,
Romance and Beauty and Pride of Place;
One breathless flight thru bewildering space;
One princely mate, who wins—and dies —
Young and strong, in the sun-swept skies;
Within the hive, proud royal ways
Thru round on round of loyal days;
And cradled there in her shadowy room,
Lives in love with sun and bloom!

My thanks for the gift you gave to me
Of miracle, marvel, and mystery.

BEGINNERS' LESSONS

H. H. Root

LESSON NO. 8—ROBBING.

YEARS ago, when bees were kept in straw skeps, robbing time was the harvest time of the year, the bees being killed by the beekeeper and the honey "robbed" away from them. It is still common among box-hive beekeepers of today to hear about "robbing" the bees to get the honey.

There is nothing pleasant about this term (used now in another sense) for the modern beekeeper, however, for any beeman who has had just one experience with bees robbing each other looks back upon that experience with a feeling of thankfulness that it is over and a feeling of dread against a return.

Robbing, as understood now, is an act perpetrated by the bees themselves, and an act that is much easier to prevent than to stop after it gets started. Bees are creatures of habit, and once they get a taste of honey for which they have not worked they become as excited as some men do when they obtain money without rendering any just equivalent. In one sense robbing is like gambling—the longer it is kept up the wilder the participants become until, in some cases, madness results. It is true that robbing often starts innocently, but it does not take long for an uproar to develop. Bees tumbling into the hive, loaded not with nectar but with fully ripened honey, excite the other bees of the hive, which then rush out to get some of the stolen sweets. In time, if some weak colony is being robbed, the bees get to fighting furiously until they reach such a condition that they will sting everything and everybody in sight. It is this sort of fracas that will cure any beginner from being so careless as to allow robbing to get started. In many localities September is a time of danger, hence our decision to devote Lesson 8 to this subject.

When I was about ten years old, my father, who was working in the apiary, handed me a piece of comb honey that he cut off the side of the hive. While I was eating it a bee got on the under side and stung me on the lip. After that I didn't want the rest of the honey and I threw it away. I wondered at the time why father was so particular to have me go back and clean up that little piece of honey; but years afterward, when I carelessly left the door of the honey-house open, I knew the reason why.

Giving the bees a taste of ripe honey and getting them stirred up is only the beginning of trouble; for once they get into the habit of robbing they may make life miserable for the beekeeper, sometimes for days afterward.

During extracting the utmost care is necessary, especially if the work is done at a time when no honey is coming in. When bees are busily engaged in gathering nectar from the flowers any quantity of honey might be left scattered all about the apiary and they would pay no attention to it. But it is this fact alone that so often gets the beginner into trouble, for he becomes careless during the honey-flow, and then some day when the honey is not "flowing" a repetition of former carelessness brings on double trouble. During a honey-flow the bees may be shaken and brushed from the combs without attracting robbers in the least; but during a honey dearth the work must be done very rapidly, the apiarist moving so quickly from hive to hive that the robbers can get no chance to pounce on any exposed honey. In extreme cases it is necessary to take the honey from a hive on one side of the apiary and then on the other, running back and forth from one side to the other so as to avoid staying very long in one place.

During a honey dearth it is much more pleasant, for the beginner at least, to free the combs from bees by means of the bee-escape. But here again caution is necessary; for if the cover does not fit bee-tight robbing will be started in the shortest possible time, for the robber bees from other hives very quickly find the leak and have the honey all to themselves, since the bees of the hive are trapped away and therefore unable to protect their stores. (The bees of the hive in question never rob from their own hive by entering above.) One should always be careful, therefore, in adjusting the bee-escape below the honey to see that the cover above is not warped. It is the height of foolishness to suppose that bees will not find an opening if there is one. They will not notice it when honey is coming in, but quickly find it at other times.

When extracting during a honey dearth it is important to see that all windows are screened. The door to the extracting-room should not be a screen door, otherwise there will always be a cloud of bees flying about it, and some of them will get in every time it is opened. The windows must be screened, but the door should be solid.

It always makes trouble to spill honey on the floor, and it makes trouble going and coming to spill it on the floor of an extracting-room, especially if the building stands on piers or stakes so that the bees can get underneath. The honey leaks thru the floor, of course, and the bees find it instantly. This is why a room having a tight foundation is safer.

After the extracting is over the danger is not past; for during the process of drawing the honey off into cans, barrels, or bottles, there is always a chance for overflowing or for leaks. A large number of producers put their honey in 60-lb. cans, two cans to a case. In nailing on the covers to the cases, sometimes if one is not careful the nail will go in sidewise and puncture a can. Then when the cases are moved about the honey leaks out slowly and the bees find it if they have half a chance.

Barrels are far more likely to cause trouble, for the honey absorbs the moisture from the wooden staves, allowing these to shrink enough to let the honey leak out. A barrel that has held water should never be used for honey; even one that has been rinsed out is unsafe. To be on the safe side all barrels should be waxed thoroly. The best way to do this properly is to let the barrel stand in the hot sun until all parts are thoroly warm, then pour into it a few pounds of boiling-hot paraffine. The opening should be immediately plugged and the barrel rolled about for a few minutes so that the wax may be distributed over every part. The boiling-hot wax will increase the pressure of air inside so that the wax will be forced into all the cracks and crevices in the wood. Before it cools the plug must be withdrawn, and the surplus poured out.

After the honey has been safely barreled up the hoops must be driven down several times until they will go no further. A good tight barrel is one of the most satisfactory receptacles for shipping honey, but a leaky barrel is an abomination everywhere. Usually new barrels are the cheapest.

Another possible cause of robbing after the extracting has been done is the nearly dry cappings. When these have drained so long that no more honey will run out they may be put in a solar wax-extractor (a shallow box having a glass lid, and lined with black sheet iron). The heat of the sun melts the cappings and the liquid wax collects at the lower end in a suitable receptacle. Unless this box is tight the bees can get started on the honey that separates from the wax. Of course, it is necessary to protect all unmelted cappings from the bees. It is hardly safe to assume that no more honey will drain out, for slow dripping keeps up a long time.

The empty combs that are still wet are usually put back for the bees to clean out. Some stack the combs up, providing a small entrance at the bottom, and allow the bees to clean the honey out by slow robbing—that is, by going in and out thru a small entrance at the bottom of the stack. There are objections to this plan, however; for if one is not careful the robbing will be fast instead of slow. Furthermore, if there is any danger of disease, such as American foul brood, it might by this procedure be scattered all around thruout the apiary. A better way is to stack up the supers of wet combs over strong colonies to clean out. There is then no danger of starting wholesale robbing and much less danger of scattering disease.

Weak colonies often invite robbing, especially if they are well provided with honey and if their entrances are large. Prevention in this case also is the best method of cure. Weak colonies should have entrances no larger than are absolutely necessary. Sometimes, however, if bees get started robbing a weak colony, that colony should be placed temporarily in a dark cellar, and a hive containing one comb with a little honey in it put in its place with an entrance about the size of the entrance to the hive that formerly stood there. When the bees take all of the honey in this one comb, thus making a thoro job of it, they will quietly disperse. On the other hand, if nothing were furnished for them to work on they might, when thwarted in their desire to get the honey, go to other hives standing near, and the trouble be extended. If robbing has but just started, it can usually be controlled by contracting the entrance, throwing a bunch of hay or grass over the front of the hive that is being robbed and keeping this wet. Robber bees do not like to dodge thru such an obstruction for they cannot make their "quick get-away." If only one colony is doing the robbing, it sometimes pays to change places—putting the robbed colony in place of the one being robbed. When there is a general "row," contract the entrances to all weak colonies, see that there is no possible opening to exposed honey anywhere, then clear out, and let the bees alone.

Beginners often mistake young bees at play for robbers. Sometimes a large number of bees will be seen flying busily around the front of the hive so that there is a scene of great activity, while other hives are quiet. Closer investigation, however, shows the young bees merely at play. Under such circumstances there is entire absence of any fighting—no sneaking and darting around of the old, sleek, greasy-looking robber bees.

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

I HAVE secured some grevalia honey this season that is almost pure of its kind, and as dark as any I have ever seen. The taste is anything but pleasant compared with our better varieties.

* * *

The melting down of colonies seems to be greater than we thought possible at first.

* * *

It is doubtful if there is sufficient white honey left in Southern California to supply the local markets until another crop is gathered.

* * *

The fact that the navel-orange crop is almost a total failure, due to the recent hot wave, will insure a very heavy bloom on the trees next season.

* * *

My wife is becoming quite an advocate of honey for canning fruit. She has used it this season with apricots and blackberries with great success.

* * *

A demonstrating lecturer at our local high school recently said that the refining of beet sugar had advanced to such an extent that there is now no chemical difference between it and cane sugar.

* * *

The majority of the honey shipped from this district went to London. The heavy increase on insurance, due to submarine activities, has had the effect of reducing the market price to some extent.

* * *

Ventilating colonies by raising the lids has created some doubts as to the desirability of this method of cooling the hive. Some argue that the raising of the cover only makes the work of the bees more arduous, in that it allows the hot air to circulate thru the hive in spite of the efforts of the bees, and that they are not able to keep the temperature down on that account. I am rather of the opinion that this may be correct when the temperature reaches 120 degrees in the shade.

* * *

The bottom-bar of the Hoffman frame is too weak for an extracting-frame. It should either be made thicker or as wide as the end-bars are at the bottom. The self-spacing shoulders are rather bothersome also, unless the combs are drawn to a great thickness. It seems to me now that I should prefer them as brood-frames only; but where the frames are interchanged it is almost impossible to keep them below.

* * *

It is very important, after requeening, to enter the winter with the greatest number of young bees possible. The future of the colony depends almost as much on a force of young bees to sustain early spring breeding as it does on sufficient stores to feed the young larvae. In this connection I am becoming more and more of an advocate of "autumn" equalizing in the spring. A young queen is the first factor, in that she pushes the breeding to the limit, but there are always some colonies in the yard that may be given brood to very great advantage the following spring; and with an abundance of young bees in the spring there need be no alarm felt about spring dwindling.

* * *

SHOULD BEEKEEPERS SELL BY CONTRACT?

I am going into the subject of selling by contract again. I am not posing as a "wise one," but there are so many beekeepers who have been caught this season that I think my argument will be more likely to find an open ear than on previous occasions. In the first place, it may be figured that when we contract our crop we are doing so at a price that seems safe as being a little higher than the general market will reach, so we are trying to get the advantage of the buyer. But the buyer knows daily what the trend of the market is, for that is his business, and he will not offer more than he feels safe in making good on, at a substantial profit; therefore *he* is trying to get the advantage of us. The average beekeeper's knowledge is so limited as to market conditions that it is not safe for him to contract at any price. It may be figured that the buyer is not going to contract at a figure any higher than the general market will bear at selling season, and one can almost always figure that a price offered by a buyer on contract will be sustained. In the face of this argument I can not but conclude that some one is going to be left, and it is more likely to be the producer than the buyer.

This season has been most peculiar in this respect. Contracting started as low as 6½ cents for white, and continued to advance almost daily. A few contracted at that price, but, fortunately, not many. But as prices advanced, producers continued to contract, many agreeing to 7½ cents. Our county organization set a price for its members of 9½ cents. At the time this looked out of the question, but proved to be a very low figure after all. At 10 cents many sold. When 12½ cents was reached a buyer became very indignant because I would not contract; but I told him I had no assurance that I would not be offered 13 cents the next day by another buyer; and as long as the buyers continued to bid up I would not sell unless they wanted to take my crop at 15 cents. This price was not quite reached, but a small amount was as high as 14½ cents. I am not blaming those who contracted, if in their judgment they were doing the right thing; and I fully realize that the man who seems to be the wise one, even in following the general market, may be classed as the fool another season. The weakness of the beekeepers seems to lie in their failure to maintain an adequate marketing information bureau.

IN TEXAS

F. B. Paddock, State Entomologist

THE twenty-first annual session of the Texas State Beekeepers' Association, held on August 2 and 3, as an affiliated section of the Texas Farmers' Congress, at College Station, was, without doubt, the best meeting in the history of the organization. Considerable surprise was expressed that such a wonderful meeting could be held this year, the hardest in twenty-five years for beekeepers over most of the state. Much credit for such a successful meeting must be given to Mr. E. G. LeStourgeon, president of the association, for his untiring efforts to make the sessions this year of value to every beekeeper in the state.

Practically every beekeeping section of the state was represented—the north, the central, the east, the south, and the southwest. Only the extreme western section was without a representative. Fifty-seven beekeepers attended the session, and visitors were present to hear many of the papers.

The program, made out by T. P. Robinson, proved to be most interesting. Those on the program who were not able to attend the meeting sent their papers to be read. Beekeeping for beginners and for specialists was well discussed, altho there was some diversity of opinion, due largely to the differing views of what constitutes a specialist. Most of those present felt that those who desired to keep a few bees for home purposes should not be discouraged in such efforts; but it was generally agreed that but few are fitted to make beekeeping a specialty. There was some diversity of opinion as to the best location of apiaries, and really the section of the state may alter any set rule.

Bee diseases and their treatment were discussed fully. Again it was disclosed that there can be many minor changes in a general plan, yet with equal success. There is yet a need for a more technical discussion of bee diseases, for there is much misunderstanding as to how these diseases work. The foul-brood-eradication work was reviewed, and plans for future work were mentioned. At present the eradication forces are called upon to conduct educational work among the beekeepers. Mention has already been made in these columns of such work in two counties. The results in one county were mentioned at this meeting. When the eradication work was started in the county last spring it was estimated that there were 1000 box hives in the county. Today 350 of those have been transferred to modern hives, and the work continues to increase each day.

The papers and discussions brought out concerted opinion that the beekeeper could more profitably produce extracted than comb honey. Many regretted that local demand was for the comb honey, and all hoped it would not be long until the consumer would ask only for extracted honey. The problem of granulation has been a big factor in discouraging beekeepers from putting comb honey on the market.

Perhaps the most interesting topic of the meeting was "Shipping Bees by the Pound." This new phase of the industry has developed very rapidly in the state during the past season. Many beekeepers launched into the package business after it was evident that the honey-flow would be short in their locality. Some of these beekeepers had good success, while others lost considerable money. Not all of the failure of this business is due to the beekeeper, for the best of them lost heavily after it got real hot. A committee was appointed to confer with the express company with a view of reducing the loss of so many packages in transit. It is expected that the express company will be willing to co-operate in any way possible.

The problems of the commercial queen-breeder were set forth in a very interesting manner. People are always ready to censure the queen-breeder in any way possible; but this topic brought out the fact that the queen-breeder has his troubles in trying to meet all the demands made upon him.

The accomplishments of the Texas Honey Producers' Association were discussed in a brief way. When the extremely adverse conditions are taken into consideration it is wonderful what has been done since the association was organized. This association is destined to a great future, which can be hastened only by the united support of all the beekeepers of the state.

* * *

Mr. Kennith Hawkins, of Washington, D. C., was at College Station to assist in the Farmers' Short Course and attend the State Beekeepers' Association meeting. While here Mr. Hawkins addressed the state meeting of the county demonstration agents, in which he urged them to give beekeeping in their county due consideration as a possible source of profit to the farmer. He called attention to the work which has already been accomplished in the two counties where the agent is co-operating with the inspector to improve the industry in the county. Before the beekeepers Mr. Hawkins spoke on the marketing of honey. This talk was very instructive to all, and enjoyed by each one in attendance. Previous to his arrival at College Station, Mr. Hawkins made visits to beekeepers in sections of the state that he was unable to reach in his visit to this state last spring.

* * *

W. H. Laws, of Beeville, Texas, has shipped a carload of bees to Wyoming, where he hopes to make a honey crop this year. Mr. Laws will return to this state in October. The same plan is being tried by B. M. Caraway, of Mathis, Texas, who has shipped a carload to Wyoming, and also by William Atchley, of Mathis, Texas, who has shipped a carload to Idaho.

* * *

It is stated upon good authority that Texas consumes ⅞ of the honey produced in the state. With the constant heavy demand for honey from outside of the state it is hard to see how there will be an overproduction of honey in Texas for some time to come. Low prices is usually given to prove that more bees are not needed. Poor marketing methods and unorganized effort has been responsible for low prices in the past. One large producer last year sold his entire crop of 23,000 pounds in 45 days without leaving home. Even at that the price raised after the supply was exhausted.

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

PROF. BALDWIN'S cheery admonition to "keep the dish right side up," page 547, recalls the interesting experience of Mr. J. C. Parks, of Scottsboro, Alabama, last season. About the middle of July he extracted, got a very short crop, returned the supers, and went about his other work, much discouraged about the bees, but too busy with general farm duties to watch them. Imagine his surprise in October to find the supers "chock full" of sealed honey, with queens crowded down to a small patch of brood in brood-chambers! Truly while there's life, and storing room, there's hope.

* * *

We spent the latter part of July in Beersheba up in the mountains of Grundy County. You may be sure that, in addition to picknicking on overhanging cliffs, exploring wild gorges and dark hollows, daring the spray waterfalls, and following cool, alluring paths thru dense woods, we also visited a few beekeepers. There were three right in Beersheba, on the mountain—Mrs. Arnold Hunerwadel, Mr. Morris Dykes, and Mr. Wm. Tate. The first two had their bees in modern hives, while Mr. Tate, who had a chance to purchase some old gums, and has had them only two years, has not yet made the change. However, he plans to invest in new hives this winter and transfer in the spring.

Mrs. Hunerwadel's apiary is an outgrowth of the southern mountain yard established at that place in 1886 by Mr. Henry Funk, of Bloomington, Illinois. Mr. Funk instructed her in modern beekeeping, so that she could look after things in his absence, according to his directions. Then in 1888, it being no longer convenient for Mr. Funk to continue, he sold outright to Mrs. Hunerwadel, who, with her husband, has operated the business successfully ever since. The average yield is about fifty pounds. At times she has had as many as eighty colonies; but four or five years ago a mysterious epidemic wiped out practically all the bees in that section, leaving her only one or two colonies. The trouble was with the adult bees, all of them deserting hives containing brood and honey—enough honey so that she sold several hundred pounds from these deserted hives. Since that disaster, disease or poisoning, or whatever it was, she has run along with a smaller yard—about twenty colonies.

Mrs. Hunerwadel says it gets pretty cold on the mountain, yet she winters on the summer stands with no protection, and has had practically no winter losses. The woods run right up to the attractive home. Scattered all thru these woods, on mountain top and side, is an abundance of locust, poplar, basswood, and sourwood, the chief sources of nectar. At the hotel "real country honey" was in great demand, that which was being served during our stay being mostly from poplar—dark, rich, a bit reddish, served in chunk, and mighty fine on hot biscuit or muffins. For steady diet, however (and we eat it pretty steadily ourselves), we prefer the lighter honeys—probably because that's what we're used to.

* * *

Mr. John M. Davis, of Spring Hill, and his son, Mr. Ben G. Davis, were the hosts of the 1917 Annual Field Meet of the Tennessee Beekeepers' Association, August 1. There were about forty present, and the day was packed full of pleasure and profit. The morning session was held on the lawn of the Davis home, under beautiful maple-trees. Mr. G. I. Matthews was chairman of the meeting. Mr. Porter G. Ward, a successful honey-producer of Allensville, Kentucky, gave an interesting talk on the honey and bee industry in Kentucky. Conditions in Maury County were discussed by Mr. Freeman. Mr. Yost, who has come to Tennessee to embark in commercial beekeeping, talked entertainingly on his experiences in Indiana. Mr. Henry Pointer, a prominent local fruit-grower, emphasized the mutual interests of the beekeeping and fruit-growing industries; and Mr. J. M. Buchanan answered and discussed various questions, relating chiefly to the effects of spraying and the part the honeybee plays in the spread of apple-blight—an insignificant part, Mr. Buchanan concluded.

The lunch was a delight—plates heaped with sandwiches, unlimited iced tea, and a sure-enough bumper crop of ice-cream cones—right in the middle of a hot day. Then after lunch Mrs. W. B. Romine, of Pulaski, whose editor-husband is an ex-president of the association, and who is herself a talented writer, reader, and lecturer, delighted every one with a charming, informal talk, followed by several pleasing original short stories and poems.

Later we wandered out into the queen-yard, where so many thousands of three-band Italian queens have started their careers. Talk about bees! It didn't make a bit of difference where you stood, your skirts brushed against some entrance anyhow. But the bees were gentle and well-behaved. Indeed, Mr. Davis, announcing that he could demonstrate the gentleness of his bees in a way that his son could not do with his bees, brought a laugh by brushing them off a comb with his whiskers! And Mr. Ben cannot do that with his bees, because—he has no whiskers! We hived a naughty little nucleus playing truant in a tree, and captured and caged several queens as for shipment, while in the honey-house artificial cells were prepared for the edification of the visitors.

Then a goodly part of the crowd motored three or four miles over to the yard where Mr. Ben Davis raises golden queens. After admiring the attractive yard and the bright, beautiful bees, a little group still lingered to discuss the conditions of the honey market, deciding it was wise and practically necessary, in the face of a short crop and the increased cost of production and marketing, to advance the price over that of last year. We don't want to be greedy or unwise, but we do look for a dignified, suitable, and fairly substantial recompense for our labor.

* * *

There has not been time enough for many wintering reports and opinions to come in yet; but among the advance guard are two interesting ones, from North Carolina and Alabama respectively. Mr. Bruce Anderson, county agent for Forsythe County, North Carolina, who has been experimenting the past two seasons with different ways of wintering, says that to date he can see very little difference between the results from regular winter cases and the method shown in the picture—packed supers with hives wrapped in heavy paper. He himself is recommending the latter, the cases being "too unhandy and costly for most farmers." Yet he adds conservatively, "More experience is wanted yet, before any final conclusions are drawn."

Mr. J. C. Parks, of Scottsboro, Alabama, had referred in a previous letter to a drop of seventy degrees in three days, with the query, "Doesn't this show a great need of winter packing in this climate?" Now he kindly writes about his first experiment with packing, made last winter. It was with packed supers and paper only, the paper being spread directly over the inner covers, and allowed to hang down to the bottom-boards, and securely fastened; over this were laid several folded fertilizer-sacks; next a super of leaves; and then the eight-inch telescope cover. The entrance was contracted, and protected from mice.

Mr. Parks summarizes as follows: "On the first day of April there were from three to six times as many bees issuing from the packed hives as from the unpacked. They stayed in the hives better in the winter, and were not out robbing and meddling with other colonies. The unpacked were robbing and nosing around, even when it was spitting snow." Not having extracted at the time of writing, he could not report as to the difference in yield.

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

AT this date, Aug. 7, the season so far as white honey is concerned can safely be considered over for this part of the country. Locally, at least, the crop has been very disappointing. After the abundance of rain that fell thru June and the first part of July, insuring a rank growth of clover, we all felt that warm weather was all that was needed to give us a crop. Then the heat came; and, altho the weather seemed ideal for nectar secretion, clover yielded very little. In our own five yards we have not a pound of honey that will grade as No. 1 clover, and the yield of the five yards varies from 30 to 50 pounds per colony. At the Simcoe County apiary things are better, but by no means have we a big crop—probably 75 pounds per colony. And all this is on the hives yet, for there is no buckwheat to force us to rush it off earlier. Honey there is flavored with sumac—the first of that flavor I have ever tasted in Ontario. I like the flavor very much myself, yet I have no idea how the public will take to something so unusual in this country. Basswood looked well also, but turned out in the same way as clover, and we did not get a whiff of the well-known odor when extracting. Buckwheat looks the best in years, and we are yet hoping for a crop from that source to balance up feed-bills and possibly leave a small margin as well.

DISAPPEARING DISEASE APPEARS.

We are asked to report if this "disappearing disease" or "Isle of Wight disease," as it is called in the old country, has ever shown up in our locality. Assuredly it visited us this year and killed thousands of bees just at a time when they were needed for the harvest. It made its appearance here late in June, when clover was just opening, and it was at its worst during the ten days in early July when we had dull cloudy weather or rain about every day. Each morning the bees would pour out of the hives by hundreds; and when once on the grass they would rush at full speed seemingly with a desire to get *somewhere,* but in a measure the movements were not altogether voluntary, for in yards that had any hollows in the ground, the ailing bees would gravitate there and die to such an extent that they would be piled two or three inches deep. They were not old worn-out bees by any means, for examination showed all to have perfect wings, altho they had no use for them. Many drones were also on the ground acting just the same but not traveling quite so fast. Italians were much more affected than dark bees; for while our home yard, which contains nearly all Italians, was badly affected, my neighbors' 90 colonies of mostly dark bees showed little of the ailment. As soon as settled warm weather came along with sunshine, the trouble ceased. But before this the colonies had been so depleted that supers formerly boiling over with bees then had but half or more of the combs occupied. Combs were simply jammed with brood at all times, and no brood troubles were noticeable at any time. The home yard and one at Markham, both mostly Italians, were the worst affected. The three other yards with more dark bees showed much less of the trouble. The big apiary in Simcoe County was in bad shape for but two or three days, and then the trouble disappeared. It is on a dry rocky location which may have made the difference. It certainly is a serious proposition when it hits as hard as it did this year; but, of course, with clover yielding but little the loss was not as great as it would have been had a good flow followed the attack. At this date, Aug. 7, colonies seem all right but not as populous by any means as they would have been if this great loss had not occurred. I have no idea as to what the trouble was nor what caused it; but judging by the fact that it disappeared as soon as warm dry weather came, it looks as tho excessive and long-continued wet weather was responsible. Of course, Great Britain has lots of weather each year such as we have been describing, and naturally we at once thought of the dreaded Isle of Wight disease. Who can tell us for *sure* just what the trouble was and what caused it?

ARE WE NOT JUSTIFIED IN ASKING A GOOD PRICE?

I read with interest what my friend Holtermann says on page 594; and while I have no intention of "throwing stones" I should like to ask a question or two. Yet nevertheless while asking these questions I might as well admit that I sympathize with his attitude, for in common with Mr. H. we happen to hold some views that are looked upon by the world as *peculiar,* to say the least. In selling your honey at ¼ cent a pound more than last year, did you have any assurance that the purchaser would not cause the consumer to pay four or five cents a pound more than he paid last year? If such assurance was not given, all your good intentions are pretty sure to be nullified unless the purchaser is different in disposition from the ordinary run of people.

Money is the medium by which we trade, and for the beekeeper honey must be turned into money, which in turn is traded for the necessities of life. A few examples of the increased cost of living might not be out of order, altho I fear they are painfully common to all who work for a living and buy the things they need—a condition with which the majority of us are confronted.

Altho not heavy meat-eaters, yet our family are not strict vegetarians. Yesterday I walked into the butcher's shop and was asked 45 cents per pound for bacon. Formerly we could buy it for about 15 cents. The baker called today and we handed him 66 cents for three loaves of bread. We used to get bread at 11 loaves for a dollar. Our family all wear shoes. We have to in winter, and they say it looks better in summer. From 50 to 100 per cent would be a safe estimate on advances in that line. We also wear clothes. Cold weather demands it in winter; and that social thing called civilization, whatever it may mean, demands that we wear *some* clothes all the time, whether weather be cold or hot. A suit that cost $5.00 for one of my boys would now be about $10; and when it comes to replenishing the family wardrobe, whether for boys, girls, or the old folks, about the same advances are noticed. Honestly I am up against a problem; for while I dislike to pay these high prices and dislike to see others pay them, how am I going to keep square with the world and pay honest obligations and still sell my product at anywhere near the old prices? As to the apple crop, it is almost a total failure in our county, and I have no idea where I could at present get the promise of even a barrel of good winter fruit.

Now, as a man with a large family to support, am I not justified, in view of the low purchasing value of the dollar and the great advance in all the aforesaid necessaries of life, in asking more than ¼ cent a pound for honey above last year's prices? Seriously, we expect to ask and get more than that advance for the small crop we have, and at present we feel quite justified in so doing.

FLORIDA SUNSHINE

E. G. Baldwin, Deland, Fla.

IT never rains but it pours. Figuratively speaking, all things seem to have combined to make our regrets more poignant this year down in our Florida. Orange honey a failure; scrub palmetto almost so. Mangrove yielding nothing, cabbage palmetto is blooming, but giving almost no honey. It seems that fall flowers must be our only source of nectar this year. Of course, at this writing (end of July) it is a bit too soon to prophesy for the partridge-pea districts, and yet that honey, wherever secured, is not a fine table honey. So it is pretty certain that Florida will furnish but little first-class table honey this season. And, to recur to our headline, our regrets are double because the prices just now are unusual. Bad enough to have no honey when prices are low. We could console ourselves by saying, "Oh, well! not much loss, anyhow." *But now!*

HONEY PRICES.

What few beemen have any honey to offer are securing from 10 to 11 cents now for it, often f. o. b. their own town stations; and word has reached me that dealers in the North are paying even 12½ cents per pound in some instances for good extracted honey. Heretofore, tho other commodities advanced in price, honey never seemed to feel the impetus, and stayed at about the same relative price as twenty years ago. But with the last two years there has come a change. Honey, for once, has advanced nearly apace with other similar commodities, and prices are now stiffer than ever before in the history of the industry; and with the close of the present war (and may that be soon!) prices will no doubt maintain a more nearly adequate and commensurate level, and stay at a price nearer the real value of honey. At least such is the hope and belief, too, of beemen generally.

LATE BLOOM FROM THE ORANGE.

A correspondent from Sorrento, Fla., states, under date of July 20, that his bees were beginning to store honey in supers from the late bloom of orange-trees. He also says that rains are bringing out the late summer flowers, and is hopeful of a partial crop yet. Last year, after almost a total failure from orange, the trees began to blossom in June, and a fair crop of orange honey was obtained in many localities. This cheering news should be taken in close connection with the generally dark outlook for the state, and cause beemen to take heart of hope and keep their dish right side up.

Nectar secretion is a vagarious and uncertain thing, depending on so many weather conditions unknown to man that the unexpected often happens. Victor Hugo says, "the unexpected always happens." A few years ago, on the southwest coast, after beekeepers had given up all thoughts of a crop that year, unless from fall flowers, a sudden flow from cabbage palmetto filled hives to overflowing, and many swarms in out-apiaries were lost owing to the beemen not attending to them in time. Much honey, as well, was lost thru lack of super room. Never say die. Until the last sunflower waves its farewell to autumn in the swamps of southwestern Florida; not until the white asters bid the closing year adieu, can the apiarist be sure that he will not secure something of a honey crop.

THE BEST TIME TO REQUEEN.

A correspondent asks the best time to requeen. His query is for Florida, of course, and for Florida conditions. It depends on whether the beekeeper buys his queens or rears them himself. In general it is best to requeen (so our experience goes) during a honey-flow—any honey-flow that is of at least three weeks' duration. We usually rear our own queens, and do our introducing of new blood during the flow from orange. But palmetto flows, or mangrove, or any good flow from partridge pea, or even sunflowers, will be a proper time for requeening. In sections where pennyroyal is abundant, new queens might well be introduced during the latter part of that flow; but it is least desirable as a season for requeening, owing to the prevailing cool weather during most of its bloom; for it begins in November and continues thru the winter. One correspondent near Tampa, however, declares that he can rear his queens successfully all thru the year. If one buys his queens he can often buy better queens, at lower prices, late in September, after beemen in the North are done buying, and he can then requeen at little cost with fine stock. Of course, if one buys his new queens he can requeen at any time that a little honey, even, is coming in; but it is easier to rear during a steady and rather strong flow that will induce swarming conditions, even if not swarming itself. In short, put in new queens whenever you can get them, and can introduce them successfully. With the expert, who understands feeding judiciously, introduction can be successful almost any time.

FOUL BROOD IN FLORIDA.

So far no further foul brood seems to be making its appearance among the bees of the central and eastern portions of Florida. We warn the beemen of those parts, however, that touches of the disease have been discovered, and unmistakable touches, too. They must be on their guard; and whenever they discover any dead brood, with brown, sunken, often pierced cappings, they must write to Dr. E. F. Phillips, of Washington, D. C., Bureau of Entomology, and ask him for proper packages in which to send him samples of their suspicious brood. Do not by any means ship any in the mails till the proper package has been sent post free from Washington. Like all contagious diseases, or many of them, at least, that are deadly and malignant in the North, foul brood is not so bad in warm climates; and we feel that it will never be the pest in Florida that it has been in some portions of the North; but only prompt and persistent vigilance can prevent loss.

* * *

We are glad to note the increasing tribute being paid to the fructifying visits of bees to the blossoms of fruit trees, etc. Here in Florida the same increase in paying tribute to the bee is noticeable. One of the largest colonization firms, operating on the East Coast, has a daily paper, and in a recent issue we read with keen delight the following title: "The Bee and the Orchard." The article continued, "The bee is the fruitman's best friend." A large fertilizer firm in the state also issued articles on the same subject. Thus the data are being spread, and fruitmen being better and better informed. What, a few years ago, was prejudice against is now prejudice in favor of the apiculturist. The beemen and the fruitmen can not join hands too closely.

AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado

THE honey market is still pretty strong, and will doubtless become stronger. The honey crop of the Inter-mountain region is not uniformly satisfactory. The season was late, and has closed early in Idaho and parts of Colorado. The honey for shipment will not be as plentiful as last year. The production of extracted honey has been largely increased, however, and this will help somewhat in making up the total amount of honey produced.

One beekeeper reports an offer from one carlot buyer of 15 cents for alfalfa honey. Some sales have been made at 13 to 14 cents.

Comb honey is bringing $3.50 to $3.75 per case, f. o. b. shipping point. The comb-honey crop will be much less than last year, as the season has been shorter and the flow was not fast at any time. Comb-honey colonies in no case made the showing that extracted colonies did. Probably not more than half the amount of comb honey will be shipped from the Inter-mountain region that was shipped last year.

AND THE PRICE.

It has been a puzzle to me for some time why honey sells at such high prices in Europe. It did even before the war. But the turn events are now taking here will help to explain the puzzle, if puzzle it is at all.

Honey is used much more in cooking in Europe than has been the case in this country. Honey has been a more expensive article to produce there than here, and the consumers have had to pay a high price or go without. As a consequence they have paid the price.

Take the case of peanut-butter right now, which is a product comparable with honey to a certain extent. Peanut-butter of various brands is being largely advertised and sold. In our own family we are using some peanut-butter, and are paying as high as 40 cents a pound for it. We used to get it for 15 to 20 cents. People who have an appetite for honey will pay for it the same price in proportion.

Fifteen cents a pound for extracted honey is not beyond the possible for producers to receive; and if we can only have brands enough of honey and all of them extensively advertised we can boost the consumption and price of honey at the same time.

THE INTER-MOUNTAIN HONEY-PRODUCERS' EXCHANGE.

Aug. 1 and 2 the beekeepers' conference on organization was held in Denver. Dr. E. F. Phillips, Mr. C. E. Bassett, and his assistant, Mr. O. B. Jessness, from Washington, were present to submit the plan of the Bureau of Markets for a central sales agency. Dr. Phillips spoke to the beekeepers on the evening of Aug. 1 upon the subject of wintering. This was one of the most valuable addresses to which beekeepers in this region had ever listened, and it was given at a time to convince. Mr. Bassett presented the plan he and his bureau had worked out. An organization was formed, and a committee of three upon draft of the plan was appointed. This committee of three is empowered to make any change in the plan deemed necessary to make it workable and suitable for the beekeepers in this region. The plan will then be submitted to the executive committee for approval. There is a great deal of work ahead, but the obstacles can be overcome. We will have the assistance in presenting the plan of a number of organization men from the Bureau of Markets. The committee on final draft is W. H. Kerr, Herman Rauchfuss, Wesley Foster. The executive committee is composed of two Colorado men and one each from Utah, Idaho, Oregon, Washington, Montana, Wyoming, and Kansas. The names will be given later when the full list is available.

GLEANED BY ASKING

E. R. Root

A. D. K., Minnesota. — The "Long Idea" hive of 20 to 25 frames has been spoken of very favorably in GLEANINGS from time to time. I am past 65, and cannot do heavy lifting. Would not such a hive be better for me than the regular standard hive necessitating the lifting of heavy bodies or supers off and on the hives? I simply cannot do any lifting, as I hurt my back some years ago, and yet I should like to produce extracted honey. Is there any real objection to the Long Idea hive, so called?

A. For your particular case the Long Idea hive would be better than the regular standard ten-frame that can be tiered up. It is very easy to give additional room in such a hive, because all that is necessary is to shove the division-board over and put in frames. The usual capacity of 25 frames is large enough for the average queen or colony.

Such a hive will not be blown over by high winds, and, furthermore, there is the advantage of wintering in a double-walled hive by contracting the brood-nest down to eight frames of bees and honey, and putting them into an eight-frame case without cover or bottom. This case should be set down lengthwise in the hive. When packing material is poured around the sides we have a double-walled hive ready for winter. The credit for this scheme of wintering belongs to J. E. Hand, Birmingham, Ohio.

Taking it all in all, the Long Idea hive for women, children, and old men, and others who cannot do heavy lifting, is ideal, provided extracted honey is the object. It is not suitable for the production of comb honey, altho sections can be put into wide frames, each frame holding eight sections.

A. L. C., Vermont. — How large an entrance ought bees to have in the fall?

A. Ordinary summer entrances that are none too large at the height of the honey-flow should be contracted down from one-half to one-third their normal capacity. We usually use a slot about ¼ inch deep and 8 inches long for a strong colony. The same area in a square or round hole is not as good, as it will not keep out the field mice. In some localities these mice do considerable damage. When they nest in a hive they keep the colonies stirred up, and by spring every bee will be dead.

If it were possible to contract the entrance automatically during cold snaps, and enlarge it during warm spells, it would be advisable. It is best not to make the entrance too small, as it might clog up with dead bees, and a clogged entrance usually means the death of the colony.

T. N. G., Michigan.—What is the most satisfactory way to store combs?

A. If the moth-miller is not bad in the locality, empty combs may be taken off the colonies after the season is over and stored up in hive-bodies or supers. These should be placed on the floor, and the tiers of supers covered in every case to prevent the entrance of moth-millers when the bees are away from the combs. Where moth-millers are prevalent it may be advisable to fumigate the combs first before putting away. This procedure will not be necessary in a cold climate unless the combs are stored three or four months before freezing weather sets in. Freezing will kill the millers and the worms, and probably the eggs. If the combs are not used the following summer after cold weather is over, they should be carefully examined from time to time, to see that the moth-miller does not get into them. Hundreds of good combs are often destroyed when they are not thoroly protected after a good freeze.

It is always advisable to keep any combs stored in supers so that neither bees nor the moth-miller can get at them. If left uncovered in a building one may find that his good extracting-combs are ruined by the moth-worm. There is no better asset in the bee world than good combs, especially if one is running for extracted honey.

W. N. V., Wisconsin.—Is it true that hybrid bees will gather more honey than either blacks or Italians in their purity?

A. Yes and no. Hybrids are surely superior to the average blacks, but not necessarily ahead of the pure Italians. Hybrids are so mean to handle that we much prefer a strain of pure yellow bees than to fuss with them. Just as good or better workers, by careful breeding, can be secured from the Italians than from hybrid stock. It is not an easy matter to have a hybrid queen duplicate herself, because her daughters will have a tendency to revert either to blacks or Italians.

W. F. E., Michigan.—Some of my colonies are hardly strong enough to go into winter. I have heard it said that when one or more nuclei in the same yard are united into one colony the old flying bees will go back to their old stand. Is this true?

A. Yes, to a great extent. It is usually advisable to unite in brood form. Hatching brood from a very strong colony can be given to a weak one; but uniting in brood form should be practiced usually in August, or at about the close of the honey harvest. If this has been neglected, your only recourse will be to unite the bees, brood and all. If the two hives are side by side, uniting can be done very easily by taking away one of the hives and putting all the bees and brood in the other hive. If there are three hives in a row, the bees and the brood should be put in the middle hive and the other two removed. Where hives are remote from each other in the same yard, bees may be united; but the flying bees, or at least some of them, will go back. If a comb and empty hive are left on the old stand to catch these bees they can be carried back. After this has been practiced once or twice the bees will stay. In the case of blacks or hybrids the returning nuisance is not so great as with pure Italians; but usually smoke must be used to prevent them from fighting. With gentle bees such a procedure is unnecessary.

Where one has a series of yards, uniting can be practiced without bees going back to very good advantage by putting the weak colonies of one yard with the weak colonies of another yard. When uniting, it is always advisable to take away the inferior queen and cage the other. Where there is no choice of queens, let the bees fight it out. It sometimes happens that both queens are killed, but usually one will be left.

J. H. G., Tennessee.—I find in a good many of my combs considerable pollen. How can I get it out?

A. Don't get it out. Combs containing pollen in a colony of bees in the spring are worth as much as combs of stores. Indeed, there are times when we would give more for combs of pollen than for stores. The latter we can get by feeding; but the former cannot be secured artificially in a manner that is at all satisfactory. Rye meal, or cottonseed meal in the absence of natural pollen, will do sometimes, but it by no means takes the place of the natural article.

To answer your question specifically, you can soak combs containing pollen in water for several days and then throw out considerable of the pollen with the extractor. But do not do it. Carefully preserve them in hive-bodies where the moth-miller cannot get at them.

I. S. B., Iowa.—How late in the fall can queens be mated?

A. As long as there are drones flying. In most localities drones will be killed off unless there are queenless colonies after the honey-flow. If there are drones, queens can be mated up till cold weather.

It is not advisable to depend on virgin queens mating in late fall—in your state, not later than Oct. 15. We do not believe that a late-mated queen is as good as one that is raised and mated earlier in the season.

S. W. B., Illinois.—Most of my colonies are two-story. They are quite strong. Shall I winter them this way in two stories, or shall I crowd them into one story for winter?

A. There has been quite a tendency of late to winter strong colonies in two stories. Sometimes the plan works, and sometimes it does not. The advantage of the two-story plan is that bees can go up into the upper hive and will then be a little further away from the chilling winds at the entrance. As a general rule, the strong colony by fall will reduce itself in size until it can occupy only one story. Where this is the case we would advise wintering in one story. The two-story colony requires a large winter case of extra depth. If cellar wintering is practiced the two-story hives are heavy and awkward to handle.

Generally speaking we fare better with colonies in one story; but it is important to see that the colony has plenty of stores and covers when cold weather comes on, at least five or six frames.

Strange as it may seem, extra-strong colonies often do not winter quite as well as those of medium strength. One reason for this is that they consume their stores a little too early, with the result that they run short and sometimes starve in the spring. Starvation is one of the principal causes of winter or spring losses.

S. A. B., Pennsylvania.—My locality is very hilly—so hilly, indeed, that it is difficult to till the soil. I run a small fruit-farm and raise a little grain, and also keep about 50 colonies of bees, but the amount of bee-pasture is somewhat limited. Would you advise me to plant anything to increase the flow of honey?

A. Sweet clover is, perhaps, the best and most easily grown artificial pasturage that can be put out. The seed may not grow readily unless the soil has been inoculated. If you cannot find a place where sweet clover grows naturally, the bacteria can probably be obtained of your experiment station, or at least they will tell you where to get it. Otherwise some of the soil where the sweet clover grows should be gathered up and scattered over the fields or roadsides where you propose to grow it. After sweet clover once gets a foothold it can be grown readily. The next thing in the line of artificial pasturage is alsike clover along with white clover. The alsike would have to be grown on cultivated fields, and it would come in nicely with your other farming operations.

L. B. W., Massachusetts.—Somehow I manage to get stung a good many times in handling my bees. The stings swell on me, besides leaving a sore spot for two or three days afterward. Some beemen tell me that they get but few stings. I wish you would tell me the secret of handling bees so as to get few or no stings.

A. Bees will sting worse at some seasons than at others. They will sting much worse toward evening and early in the morning than during the middle hours of the day. They may sting any one if he is an awkward bungler, and they may sting those who are very nervous and jerk their hands back, slapping and striking at the bees.

To avoid stings one must, first of all, select a favorable time during the middle hours of the day, and he must be very deliberate in his movements. He must have his smoker in good working order, and fuel burning well. It is not necessary to use a great amount of smoke, but a little at the right time and at the right place is better than volumes and volumes of smoke after the bees are enraged and on the warpath. If one is very timid he should wear gloves to begin on. After he becomes bolder he may cut off the ends of the fingers, for one cannot do good work in gloves. He should wear a good veil, and have it securely fastened around the neck in such a way that it does not leave gaps between the shirt or coat and the edge of the veil. The directions sent out by the manufacturers explain how this is done.

With everything in readiness, and assuming that the operator has selected the hours of from 10 to 2 o'clock, with sun shining, atmosphere warm, he may now proceed. He should blow a little smoke in at the entrance—two or three short puffs. No matter how much smoke is used on top of the hive, if he does not use it at the entrance the breaking of the propolis at this time of the year may enrage the guards at the entrance, with the result that they may or may not make an onslaught on the bewildered operator. To keep back these guards and those near the entrance, two or three puffs of smoke in the entrance is a safeguard to the beginner, tho by no means essential to the expert who can avoid these snaps and bangs.

The next operation is to enter the hive-tool, screwdriver, or putty-knife, between the super cover and the hive proper. This tool should be thin enough so as to leave a gap of not more than an eighth of an inch. As soon as a gap of that width is made, blow a little smoke in; remove the tool and make another gap, and blow some smoke in there. If one has to be extra cautious, let him loosen the cover in this way clear around the hive. Every time he makes an opening of not more than an eighth of an inch he should blow in a little smoke. Now place the hive-tool between the hive and super-cover. Follow this up with smoke. Gently lift the lid, following it with more smoke. Each movement should be deliberate.

If the bees rush out, which they will do on an unfavorable day, do not jerk the hands back. Most of the bees' movements are mere bluffs; but if the hand is jerked back these bluffs may be turned into real action—stings.

If the bees appear quiet, the smoker can be set down; but we would advise holding the smoker in one hand and the hive-tool in the other. Gently loosen each frame. Next select a very thin comb—the thinnest in the lot. Very often this will be the outside frame. Make a gap between it and the other frames as wide as possible. Blow a little puff of smoke over the top. Gently lift the frame out, being careful about rolling the bees between the combs; for nothing will enrage bees more than to pinch or maim them when taking out the frame.

After the first frame is out, make plenty of room so any one of the combs can be removed without pinching a bee. After the hive is once opened up, there will be but little trouble; and all one needs to do then is to be careful about putting back the last frame. Make as wide a space as possible, and gently set it in place. The last thing of all is to take the hive-tools, if the frames are self-spacing, and shove them together, for the bunch of frames must be centered in the hive. Never leave frames unequally spaced, for the result will be fat and lean combs. When next one comes around to lift the frames out he will be greeted with stings because one or more fat combs have filled up all the available space in the hive for removing a comb.

If one will practice deliberation in manipulating hives, always forming correct habits, he will find that he can accomplish more work by moving slowly than by rip-banging thru the hive. The beginner should select a time that is favorable for handling bees; for then he will discover he can get along without a sting, even when conditions are not right. We once worked a whole month without a single sting. The bees were gentle Italians and the weather favorable.

W. L. C., Missouri.—What makes my bees sting much worse in the fall than in the summer?

A. One reason for this is that in cooler weather the propolis will yield with a snap. In warm or hot weather it lets go by merely stretching. A snap or a bang to a hive, unless a large amount of smoke is used, makes many bees cross. Usually all necessary manipulations in the fall should take place in the middle hours of the day when the air is warm.

More propolis will be deposited in the fall than during the summer. Bees at such times have nothing to do, and will then gather an abundance of it. This abundance, together with its greater brittleness, and the cooler weather, make it more difficult to handle bees in the fall than in the summer.

J. R., Ohio.—Why do my bees hang out in front of the hive every night, in a great bunch, as they have done for a month past?

A. It is possible that your colony is very strong, and that it is impossible for all the colonies to get into the hives. Theremedy is to give more room if the season is not over, and also enlarge the entrance. If the colony is a very strong one it may be necessary to set the hive up on four ⅞-inch square blocks. Hives should be lifted off the bottom and the four blocks put under the four corners.

F. M. M., New York.—In outdoor wintering what kind of packing should be used?

A. Any material that is porous and cheap may be used. Wheat or oat chaff gives excellent results; but with modern thrashing these cannot be secured. Dry forest leaves when well packed down give good results. Planer shavings can be secured by the bale at any planing-mill, and they are cheap and serviceable. Ordinary sawdust from the sawmill is generally a little too dense and heavy. The same may be said of clover chaff. Mineral wool is good, but expensive. Ground cork is excellent, but in most localities it is not now obtainable. In the absence of any of the materials mentioned, straw, when closely packed, will be as good as anything. Hay would be just as good, but it is too expensive.

W. B. H., Connecticut.—Two of my yards are located on top of a knoll where the wind can strike them from all directions. I expect to winter outdoors in winter cases as recommended by the Bureau of Entomology. Would you advise moving the apiary to a more suitable location?

A. Yes, by all means. A yard of bees will often winter well in single-walled hives in a sheltered spot where another yard of bees in the best cases that were ever made, in an exposed location, will winter very poorly. We put sheltered location first, and winter packing second; but both, for outdoor wintering, are essential.

If you move the yard to a more sheltered place, wait till cold weather has set in, as you might lose many bees returning to the old stands; and you may lose some anyhow on the first fly-day. If you have a yard located in an exposed place, better move it three to five miles.

C. M. F., Massachusetts.—At the same price per pound, which would be the better feed for winter—extracted honey of inferior flavor and of dark color or granulated sugar syrup?

A. The first mentioned would be better for a spring feed; but on account of dysentery, as well as danger from disease, sugar syrup would be much safer. Where one can have positive information that the honey has been produced in a yard where there is no bee disease, and never has been, he can feed it provided the quality is sufficiently good. If the honey is of good quality, and free from disease, pound for pound it is superior to sugar syrup provided the price is the same.

G. L. B., Minnesota.—I have heard considerable about the merits of the big quadruple winter cases holding four hives to the case. How does the double-walled or chaff hive compare with these winter cases?

A. In extremely cold localities, where the mercury goes down to 20 or even 30 below zero, and stays there for weeks at a time, the big cases are probably safer than the individual double-walled hive. The ordinary double hive has only about two inches of packing space between the walls, while the winter case has not less than six inches around the sides exposed, and eight or ten inches on top. There can be no question but that, in a cold climate, either big winter cases or cellar wintering should be employed. Which should be used will depend a good deal on conditions. Where there is good drainage a cellar will probably give good results. See article in next issue.

E. L. B., Ohio.—I notice that there are no eggs or brood in my hives, and the queens look small. Should I requeen?

A. If there is no fall pasturage of any kind, and no stimulative feeding has been practiced, the average queen six months or a year old at the close of the honey harvest will let up on egg-laying, and may not lay any eggs at all. A young queen a month old will lay thru the late summer and fall.

Almost every fall we get orders for queens from beekeepers who say that they find no brood or eggs in the hive, and conclude that the colony must be queenless. The fact is, when there is no fall flow the condition is a natural one. We usually consider it best to practice stimulative feeding if there is no fall pasturage in order to get out a force of young bees. A colony with old bees only may not winter well.

W. C. B., Minnesota.—Is it possible to extract honey from the combs without an extractor? I have only a few combs, and do not wish to go to the expense of buying a machine.

A. It is not very practicable. If combs containing honey are old and dark, and would not do to eat direct, you had better buy a small extractor or build one for yourself. A small honey-extractor is almost a necessity in any yard, even tho it be run exclusively for comb honey. There is a trade that wants honey in the liquid form; and it is well to be prepared to supply whatever is called for.

J. M. C., Vermont.—I notice that for stimulative purposes you recommend the use of a thin syrup—half sugar and half water. Could this be used for feeding up for winter?

A. Yes, but it would require too much hard work on the part of the bees to reduce it down to the proper consistency. In other words, it would exhaust the vitality of the bees too much. For winter feeding, use a syrup not weaker than two parts of sugar to one of water. If feeding has been delayed till late in the season, use 2½ parts of sugar to one of water by weight or measure. The sugar in any case must be thoroly dissolved. For very late feeding a little vinegar, or, better, some honey, will prevent crystallization.

J. H. C., Rhode Island.—Years ago there were several reports of bad wintering on aster honey. I live near an aster swamp. Should I extract this aster honey if the bees gather it, and feed sugar syrup?

A. No. If the aster stores are sealed before the bees go into permanent winter quarters, they will prove to be perfectly safe; but if they are unsealed and somewhat thin, you may have considerable dysentery before spring.

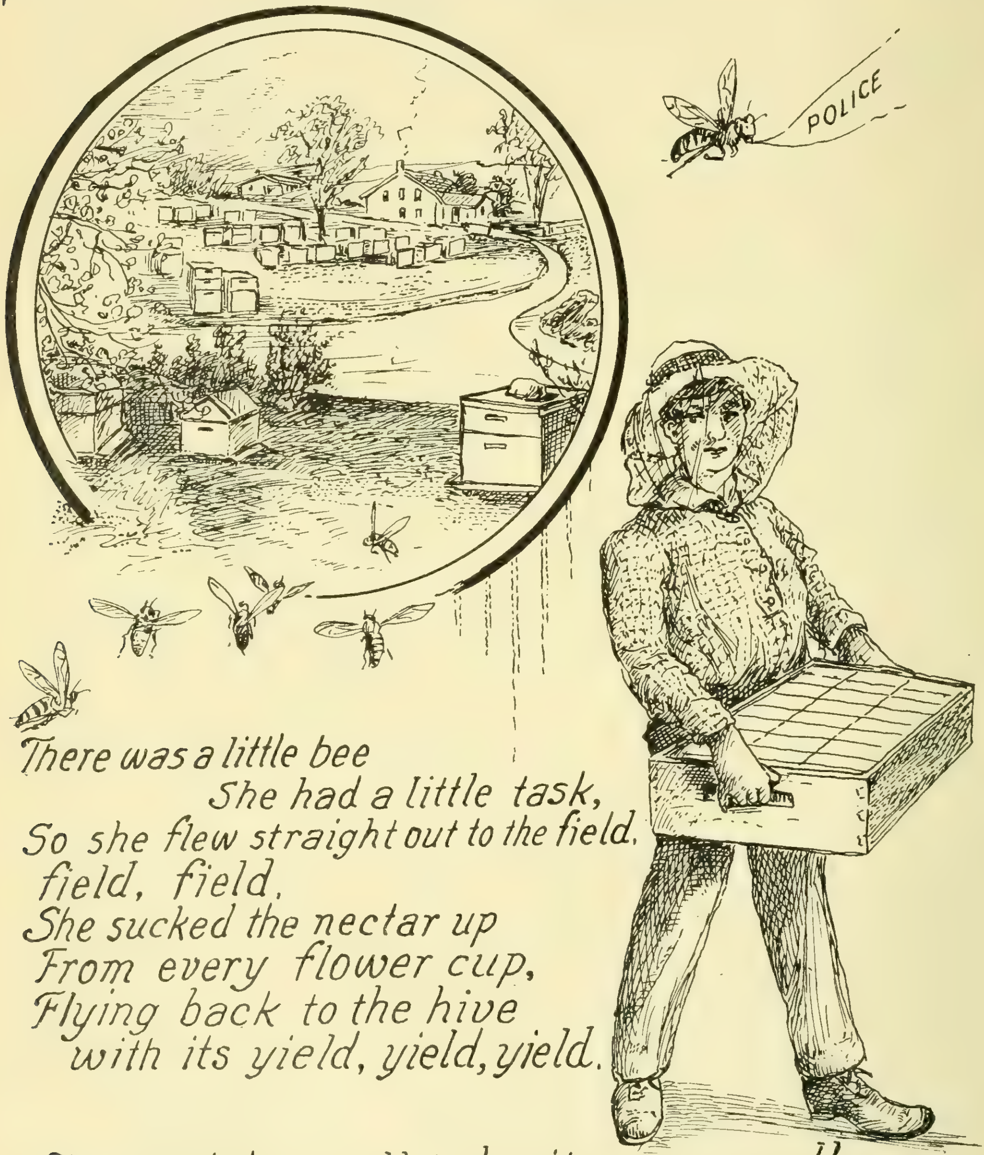
B. C. L., New York.—Do bees work on ripe fruit and spoil it?

A. Yes and no. They will not injure sound fruit; but if the fruit is overripe so that it bursts open, or if the skin has been punctured by birds or insects, bees will come in and join in the spoilation. They will then suck the juice out of the fruit until only the hard skin is left. Whether bees will attack broken or injured fruit will depend on the season. If they can gather honey from any of the natural sources they will ignore the fruit; but when no sweet is available they may attack any fruit with punctured skin.

In California during the fruit-drying season bees will sometimes be a nuisance in helping themselves to the juices of cut fruit while it is drying in the trays.

Mother Bee NURSERY RHYMES

By M.G.P. (Mother Goose Plagiarized.)



There was a little bee
She had a little task,
So she flew straight out to the field.
field, field.
She sucked the nectar up
From every flower cup,
Flying back to the hive
with its yield, yield, yield.

She put it in a cell to let it ripen well,
And she bade her comrades to fan, fan, fan.
Then when the comb was done,
With cells filled every one,
That honey was stolen by a man, man, man!.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Lessons Learned in the School of Experience.

Late last winter L. E. Webb, of Morganton, talked to me so often about bees that I caught the fever. I purchased one colony of five-banded Italians. Soon after that I was taken to the hospital and underwent an operation for appendicitis. I had a very serious operation, and for three months was hardly able to walk out. Mr. Webb came down and hived a swarm for me, and a few weeks later the original colony swarmed again, clustering on the limb of a tree some twenty feet from the ground. I was still unable to help, so a neighbor cut the limb and the bees dropped to the ground, killing thousands of the bees. The rest arose, went to a little bush, and clustered again. We had the hive placed under the bush and knocked the bush with an ax. The bees fell and then took wing and left.

Soon after that the new colony swarmed and I decided to save them. I put on a veil that seemed bee-proof, walked into the swarm, shook the limb, and—ran. A neighbor told me to knock on the hive with a knife to charm the bees. Before I could do that some bees had found a way under the veil. There were hundreds on the outside, and these few inside. The physicians had told me not to run, owing to my condition, but I shamed a bee in speed. A few stings in the face and neck told the story. I was getting experience. I needed a better veil. I knew that, especially after the bees showed me the leaks in the old one.

On the Fourth of July I had my greatest celebration. I live on the lot adjoining the graded-school lot, and my bees observed the Fourth by swarming on a peach-tree near the school building. I hired a young fellow to hive the bees. He told me he was an expert—he knew all about bees, how they worked, how they swarmed, how they traveled, how to manage them—in fact, everything about a honeybee. I put a small veil over my face and stood some fifty feet away to see the fun. This young fellow needed no veil—bees never stung him, he said. The bees were quiet on the peach limb, nine feet from the ground. The tree was small. The limb on which the bees were clustering was about the size of your finger. There was a peck—moving, shining in the sunshine—so gentle, they seemed! The hive was placed by the tree, and the young fellow, this expert, without veil, picked up a fence-rail, gave it a swing and hit the tree with all force. What happened? In four seconds the "expert" was making tracks down the hill, fairly flying. The bees never bothered him. They could not catch him. But they called on me. I quickly pulled down my veil, arranged it all around and thought I was all right; but a hole opened up and the bees streamed in. I ran at a dangerous speed; but when I reached the house more than fifty stings were in my chin, face, and on my bald head. I thought my time had come. I was ready to go out of the bee business. I decided to sell my bees at once, but the next day I changed my mind. I found that the fault was not with the bees but with me. I decided to try again.

The rainy season stopped the honey-flow, and the last of September I decided to feed all three of my colonies. About dark I made a syrup of sugar, put it in a dish, and arranged it before the super; but in my haste I left off the inner cover, and the outer cover left an opening about half an inch all around. I did not know this then. The next noon a neighbor told me robbers were after his bees. I went down to see, and you never

Mr. Abbott's out-apiary at Palms, Mich.

saw such a stir among half a dozen colonies. I decided to see about mine, and, to my surprise, this neighbor's bees were making war on my colony, and nearly a gallon of dead soldiers lay before the hive. It was a battle royal. The guards watched the entrance, but they could not watch the top. I saw my mistake, and am entering my next season a wiser beeman and with greater hope.

Morganton, N. C. A. C. Kerley.

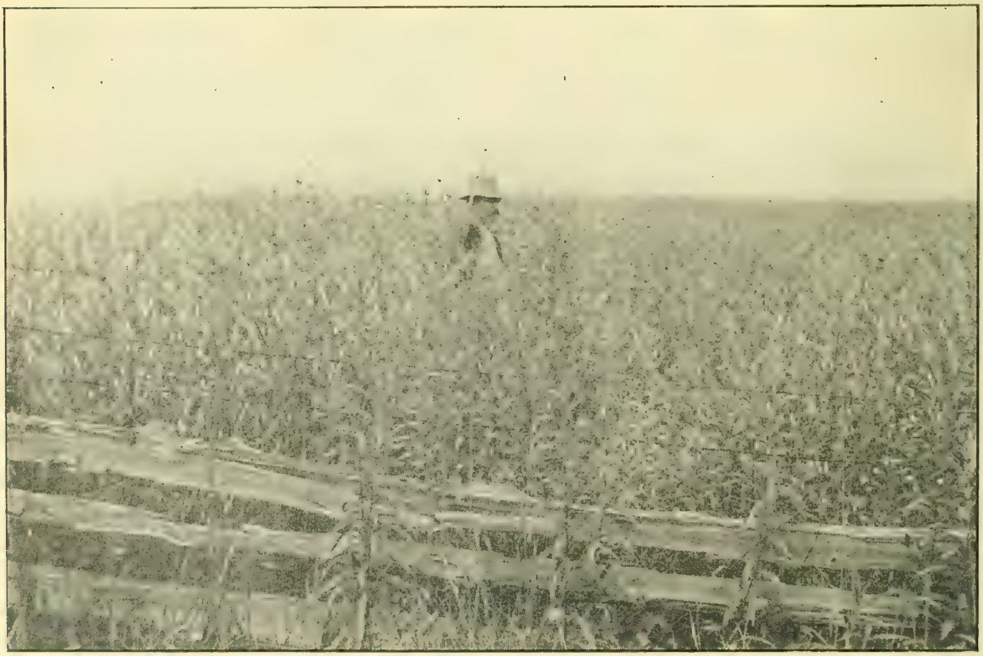
* * *

Liquefying Candied Honey That is in Large Vats or Tanks. Last autumn extracted honey was selling for only a fair price; in fact, the sales were rather dull. The most of my crop was put up in five-gallon tin cans, but 600 pounds was in a galvanized iron tank. I was not in a hurry to sell, for something seemed to tell me that extracted honey could not go much lower, while there was a fair chance for an advance later on. Every one who has read ''Gleanings'' and watched the market knows how extracted honey has advanced in price.

When the time came to sell to advantage the honey in the five-gallon cans was partially candied. This I sold in March. The man who purchased it reminded me of the granulating, and, while he did not deduct anything from the price he offered, he intimated that he might have done somewhat better had the honey been in the liquid state. He said he would have to liquefy it.

The 600-pound tank was mounted on a stand 18 inches high with the center cut out some 12 inches square. For two days I placed a coal-oil stove (two four-inch wicks) underneath, but this was making slow progress in zero weather. I then set up a cook stove in the honey-house, and put a large galvanized tub on it. A tub about five inches smaller in diameter was placed inside, supported by some bent pieces of scrap iron to keep it one inch from the bottom of the first tub. Water was poured in between, and a fire started. I then started to fill the inner tub by scooping the honey from the top of the tank with a grocer's scoop. The honey was candied hard, and any beekeeper who has had any experience along this line knows what that meant.

After so long a time the coal-oil stove, tho quite feeble compared to its task, began to get in its work; and by ramming a stick thru the honey-gate in the tank I coaxed the honey to flow slowly into a pail. I could now scoop out at the top and also draw off below. I had a nigger's coon-trap—''I catched 'em a-goin' and a-comin'.'' I kept a slow fire under the tub, but I never let the water get any hotter than I could bear my hand in. I believe this is a fair test in the absence of a thermometer. It is better to take a little more time to liquefy honey than to ruin the flavor.



A mighty fine sweet clover field owned by Frank L. Abbott, Palms, Mich.

HEADS OF GRAIN FROM DIFFERENT FIELDS

I know this is a crude arrangement, and my object in writing this is to draw out the modus operandi of some fellow who knows a better way.

Each year when I receive a new catalog I look thru it to see if I can not find some kind of apparatus for liquefying honey, but it is never there. What I want is something that is not too expensive nor too complicated—something that requires neither an electrician nor a civil engineer to operate, and something that will do the work without my help nights to keep its feet warm.

When candied honey is reduced to the liquid state a slight scum will rise. It is best to skim this off and use it for bee food; for if put into the cans without skimming this foam will rise to the top and give a bad appearance.

By all means we should put our honey on the market in the best possible shape. It will not only help us to get a better price, but will also help our brother beekeepers. A poor quality of honey on the market runs down the price of all honey; a fine quality brings the price up. S. E. Miller.

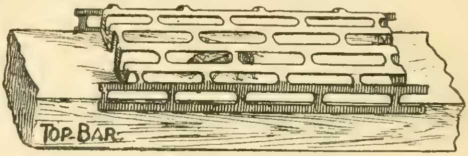
Rhineland, Mo.

* * *

The Rearing of Queens in an Out-Apiary.

In the morning, get an empty box with a loose bottom, and a little water. See that the cell cups are all ready, and go to a colony that is pretty strong. If the bees are in the super, all the better. Take out three frames of sealed brood along with the adhering bees, and put them in the empty box; also a frame of honey if the other frames contain none. Then shake two frames of bees off from the combs that have unsealed brood. Space the frames about an inch apart; sprinkle them with the water, and cover, being sure the queen is left in the old hive. Remove the mother colony to a little distance and put in its place the divided portion. About half an hour after graft the cells and insert them between the spaces previously made. Be careful not to use too much smoke. Lift the cover gently to avoid exciting the bees which will be hanging in the spaces. In the evening take out the frames with the grafted cells and brood along with the bees and put them in the super of the mother colony after replacing it in its old position; or lift the hive with the cells and brood; place it on top, with a honey-board between. If a general requeening is intended, more than one lot can be grafted. Start killing on the fifth and continue until the ninth day if the apiary is large. After grafting count the cells. If not sufficient, graft some more.

On the tenth day put cells in protectors. For keeping them warm, tack wire cloth on the bottom of a super and put it on top of a strong colony, and cover; then inclose the cells in protectors and place them in the super, using as fast as needed. If at home, the cells can stay until next morning before transferring to the queenless swarms. The cells are then distributed in the middle of the brood-nest, between the sealed brood of the queenless colonies, so as to avoid chilling. In about twelve days after giving the cells, the queens should should be laying. It's not necessary to use royal jelly if the larvae are well fed. I have had better results without the jelly, and very few failures if the larvae are put in carefully. If no honey is coming in, feed the cell-building colony with a slow feeder.



A HANDY QUEEN-CAGE.

To use this queen-cage, place it on a top-bar of a frame; raise one end about half an inch and put the queen under. It is used mostly during swarming time, when the cells are destroyed and the queen caged for ten days.

Medina, O. J. E. Thompson.

* * *

After Removing Brood, When Can the Bees Start in the Supers?

If one frame of sealed brood is removed from a colony having five brood, I should like to know how long it would take the colony to be in condition for gathering. I ask this in order to know when I should draw from the strong and when I should not. To illustrate: Suppose my best colonies have reached the stage of "five brood;" but, perhaps, owing to a poor spring or poor wintering, they need all the remaining time to get into condition for surplus. How much time will it need? and how much more time after removing one brood to bring it into the proper condition, all things being favorable? J. H. Fisbeck.

St. Louis, Mo.

Dr. Miller replies:

Upon first thought your question seemed a stumper; but upon studying it over it doesn't seem so hard. Evidently you have in mind that when brood is drawn from a colony that colony must have a certain time to recover before it is fit to do super-work. It is true that taking brood or bees from a colony diminishes its force of storers. Of course, there might be a case when taking away two or three frames of brood would make the difference between swarming and not swarming, thus increasing the surplus; but as a general proposition every brood or bee taken from a colony means at least a little less surplus from that colony.

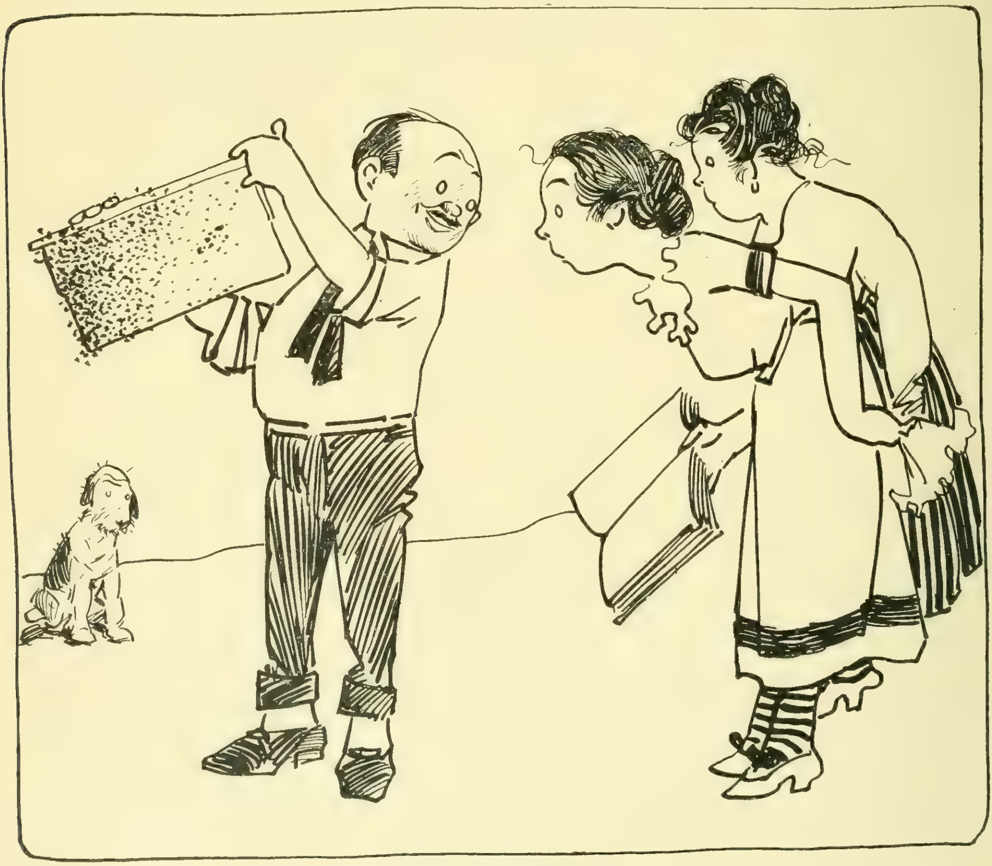
But from this it does not necessarily follow that taking away from a colony all but four of its brood incapacitates it entirely from storing surplus. Think a minute; when a colony sends out a natural swarm, it's not the mother colony, with all the brood, from which you expect a harvest, but from the broodless swarm. When you shake (or brush) a swarm you take away all the brood, but you expect the broodless bees to go right on storing, without waiting to build up. So when you take away from a good colony all but four of its brood, it is still left fit to do super-work. You have taken away none of its field-force; they will return. If it has more than four brood, it is already strong enough to store surplus, if its bees have any get-up-and-go to them, and reducing to four will not knock it out.

So the answer to your question is that it is never too late to draw brood so long as you can thereby fit another colony to do super-work, even if it be in the middle of the harvest.

* * *

The Paper Bottles Are All Right I used the sanitary paper bottle for two years, and liked it very well. To overcome the leakage around the covers I sealed them with boiling-hot paraffin wax—a plan that gave good satisfaction. J. Stuart Scofield.

Kirkwood, N. Y.



THE BACK-LOT BUZZER

BY J. H. DONAHEY.

Miss Nettie Sweetiemouf is such a stickler for precision since she bought her new A B C on bee culture, that when her beau calls her honey she makes him specify whether he means golden rod, buckwheat, bass wood, or clover.

JUST NEWS

Editors

Chas. A. Reese. Assistant Entomologist in charge of apiculture, Charleston, W. Va., is laboring earnestly to rouse the possible beekeepers of his state to the opportunities in apiculture. He is sending out circulars appealing to West Virginia beekeepers to keep more bees and to use modern equipment. There are some wonderful opportunities in apiculture in West Virginia, and Mr. Reese is on the track of the mountaineers, preaching the gospel of good beekeeping. It will be news (if not a surprise) to most beekeepers of the country to know that West Virginia has a larger appropriation than any other three states for carrying out the provisions of the state bee law. The legislators have not been wanting in their duty to promote the bee industry. Mr. Reese would very much like to promote a West Virginia beekeepers' and honey-producers' association. Such an organization could be of great use and value to the beekeeping interests of the state, and every West Virginia beekeeper should lend his aid to Mr. Reese's efforts in this direction.

* * *

The beekeepers of British Columbia held a field day and convention at the Vancouver Exposition on Aug. 24. Special prizes were offered for exhibits of large quantities of honey as an incentive to greater production. The experimental apiary inaugurated by the Beekeepers' Association of British Columbia at Hastings Park was used for demonstration purposes during the week of the exhibition. The meeting of beekeepers especially discussed the difficulties of beekeeping in British Coulmbia, which are many, owing to the peculiar climatic conditions. Mr. Williams Hugh, of Cloverdale, B. C., is the enthusiastic and hard-working secretary-treasurer of the association. His hard and earnest work certainly ought to bear fruit in the great Rocky Mountain province of Canada.

* * *

The Queensland *Apicultural Journal*, published by the Queensland Beekeepers' Association, at Frisbee, is now a year old. The honorary editor, popularly elected, is the president of the association, Mr. H. L. Jones, and the secretary is Mr. E. M. Tarte. The association has a membership of 250, and Queensland has nearly 1500 practical apiarists. Mr. Tarte, the secretary, writes Gleanings that the chief purpose of their journal is to encourage co-operation and organization. He adds that Queensland has the largest and most energetic association in Australia, and is just about to establish a co-operative honey company on some such lines as those of the Colorado Honey Producers' Association.

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Mr. Francis Danzenbaker, known as the inventor of the Danzenbaker hive, Danzenbaker section, and Danzenbaker smoker, died at Richmond, Va., on July 24, at the age of 80 years. Mr. Danzenbaker introduced to the beekeeping world the lock-cornered principle on hives—something that has been adopted by practically every beehive manufacturer in the United States. The Danzenbaker section and super are still used to a large extent. He also invented the smoker bearing his name; but as this was on the cold-blast principle it never had a very large sale. Likewise his hive, on account of the unpopularity of closed-end frames, is going out of use also. Mr. Danzenbaker was still keeping bees, and was a frequent exhibitor at various state fairs, showing his hives, honey, and bee-smoker.

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Here is the program of the Ohio State Beekeepers' Association to be held Sept. 6 and 7 at Wilmington: Thursday, Sept. 6, 10:30 a. m.—Prayer, Rev. J. J. Richards; Minutes of Medina Meeting, Ernest Kohn, Grover Hill; President's Address, Melville Hayes, Wilmington; "Educational Value of Inspection Work," A. C. Ames, Weston; Appointment of Committees. 1:30 p. m.—"Cuban Bee Industry," D. H. Morris, Springfield; "Queen-rearing," J. P. Moore, Morgan, Ky.; Fred Leininger, Delphos, O., and Mel Pritchard, Medina; general discussion. Thursday evening session, 7:30 p. m.—"Prevention of Swarming," C. P. Dadant, Hamilton, Ill.; "What Ohio University is Doing for Beekeeping," Jas. S. Hine, Columbus; "Successful Beekeeping," E. R. Root. Friday, Sept. 7, 9:30 a. m.—Meet at Walker Memorial building for automobile ride over Clinton County, under auspices of Wilmington Commercial Club. Afternoon session at opera-house at 1:30.—"Mother Goose's Melodies" (paraphrased), Mrs. G. P. Phillips, Washington, D. C.; "Flowers" (pollenization and cross pollenization), E. R. Root, Medina. (This meeting will be attended by pupils of Wilmington public schools under charge of Prof. E. P. West, superintendent, and by the ladies of Wilmington.) Friday evening session, 7:30.—"Wintering," Dr. E. F. Phillips, of Bureau of Entomology, Washington, D. C.; Question Box, E. R. Root, Medina.

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Prof. E. R. King, of the New York State College of Agriculture at Cornell University, is author of the Cornell Extension Bulletin on " How to Increase the Honey Supply." This is an excellent bulletin. In it he estimates the actual number of colonies in New York State to be more than 300,000.

* * *

At the Virginia State Farmers' Institute, held at Blacksburg on Aug. 16, the Virginia Beekeepers' Association was organized, with the following officers: President, T. P. Asher, Brookneal; vice-president, Mr. Coche, Danville; secretary, Prof. W. J. Schoene, Blacksburg. These officers and Dr. W. H. Donigan, of Gratton, and E. C. Spane, of Church Road, constitute the executive committee. There was much enthusiasm shown at the organization. Geo. S. DeMuth, of the Bureau of Entomology, Washington, D C., was present to demonstrate.

* * *

The committee of the Western New York Honey Producers' Association on Aug. 11 recommended that beekeepers sell their 1917 crop of honey for not less than the following prices: White extracted—60-lb. 5-gal. can wholesale, 14c to 15c per lb., and retail, $10 per can; 10-lb. pail wholesale, $16.75 per doz., and retail, $1.75 per pail; 5-lb. pail wholesale, $9.00 per doz., and retail, $1.00 per pail; 1-qt. jars, $6.00 per doz., and retail, 65c a jar; 1-pt. jars wholesale, $3.25 per doz., and retail 35c per jar; 1-lb. jars wholesale, $2.40 per doz., and retail, 25c per jar; 6-oz. jars wholesale $1.15 per doz., and retail, 13c each or 2 for 25c; bulk (no packages), 16c; amber or dark honey, 1 to 2c per lb. less. Comb honey—fancy white, $4.50 per 24 sections, 25c per section; No. 1 white, $4.25 per 24 sections; 25c per section; No. 2 white, $3.75 per 24 sections, 20c per section.

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The Division of Farm Publications of the Department of Agriculture at Washington sends out the following under the headline, "Bee Kultur for the Kaiser:" "Because so much alfalfa was winter-killed in the Middle West the government has been urging the farmers to try out Grimm alfalfa in that section. Gleanings in Bee Culture suggests that alfalfa-growers who suffered from winter-killing put in sweet clover, stating that their excuse for butting in on government advice is because sweet clover is a great honey-plant. All right, Gleanings, we are for 'most anything that will make the busy bee sting the Kaiser harder."

* * *

The Department of Agriculture of Ohio in its report on the condition of crops of date of August 1 estimates that the apple crop of Ohio will be less than half a normal crop. Its estimate of the honey crop is 57 per cent of a normal crop, and only 54 per cent of last year's crop. Even if it were not for the under-production of honey this year, it is said on the authority of good beemen that honey prices are always higher when the apple crop is short. There do not seem to be many factors lacking to boost the price of honey this year.

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Mr. L. W. Randall, writing from Norwood, South Australia, says that beekeeping in that country is still in its infancy, altho there are about 30,000 colonies in that state. The climate is very similar to that of California, and the main source of the honey-flow is eucalyptus. The winters are extremely mild. Three months of the year are cold and wet; but even during that period there are bright sunny days which allow the bees to have a good cleansing flight. South Australia, as Mr. Randall says, seems to be an ideal place for beekeeping.

* * *

The all-day summer meeting of the Pennsylvania Beekeepers' Association held at the apiary of L. K. Hostetter, near Lancaster, on Aug. 16, proved a great success. It was the largest field meeting this association has ever held, about 125 persons being present. Prof. H. A. Surface (former state economic zoologist) and wife were present and took part in the program. The Hostetter families extended most generous hospitality to the beekeepers present. The annual meeting of the State Association will be held at Lancaster next January.

* * *

Our readers in Western Ohio, Western New York, and Indiana will be saddened to learn of the very sudden death of G. A. Offineer on Aug. 12. For some years he has acted as honey-buyer for The A. I. Root Co. in the localities mentioned. It will be hard to replace him, as he had in an unusual degree the confidence of both his employers and the beekeepers, realizing that their interests were identical. We shall miss him as a friend and as a loyal, efficient worker for the best interests of the beekeeping world.

* * *

More than fifty beekeepers attended the annual field meeting of the Chicago Northwestern Beekeepers' Association held Aug. 14 at the home apiary of the president of the association, Mr. E. S. Miller, Valparaiso, Ind. Talks were made as follows: C. P. Dadant on swarm prevention; D. W. Erbaugh on bee diseases and treatment; John C. Bull on crop prospects and prices for this crop; E. S. Miller on wintering and overstocking. As to honey prices, the association recommended that comb-honey wholesale price be 18 cents and retail price 25; extracted, wholesale, 15 cents, and retail 25.

* * *

Twenty-five new members joined the Polk County (Iowa) Beekeepers' Association at yearly meeting held on Aug. 4. Dr. C. L. Wright was re-elected president, and Mrs. E. C. Scranton, secretary and treasurer. The meeting took a patriotic turn. Among other evidences of this was the omission of the customary picnic dinner, and giving the amount of its usual cost to the Red Cross. Among those who addressed the meeting were: Mr. R. H. Faxon, secretary of the Des Moines Chamber of Commerce; Mr. J. W. Jarnagin, editor of the *Iowa Farmer;* Mr. B. T. Bleasdale, president of the Iowa State Beekeepers' Association; Prof. Atkins, of the State Experimental Station at Ames; Dr. Bonney, of Buck Grove, and Mr. C. P. MacKinnen.

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The New Jersey Beekeepers' Association was to hold a special field meeting with demonstration on Aug. 30 at the apiary of E. G. Carr, New Egypt, N. J. This enterprising association will hold a hive-product show at the Trenton Interstate Fair, Sept. 24 to 28. Generous premiums are offered for exhibits made at this show. Address the secretary, E. G. Carr, New Egypt, N. J., for further particulars.

* * *

BEEKEEPERS' MEETINGS.

The editor attended a series of field meets in the eastern states within the last few days. As little time remains before going to press we can give only the briefest mention.

At Reynoldsville, Pa., we met an enthusiastic crowd of beekeepers with their wives, at the residence of A. M. Applegate, on Aug. 1. This home is nicely located on a hill that overlooks the town. Generally, the season thruout Pennsylvania has been unsatisfactory, the crops being short; but the prospects were favorable for sumac and prickly ash. Chief Inspector Geo. H. Rea drew out the fact that bee disease, both European and American, had wiped out a good many small yards thruout the state. There were not half as many bees as were formerly kept; but inspection was now under way, and he hoped the disease would be brought under control.

The next field meet we attended was under the auspices of the New York State Association of Beekeepers' Societies, held at the residence of S. D. House, Camillus, N. Y., Aug. 3. The general reports from over the state showed a shortage in the crop over that of last year. Some beekeepers reported only 25 per cent, others 50, while some thought they would have a full crop, as basswood was well on. There were plenty of field demonstrations, and on that day Mr. House had something like five or six swarms. As they went out and clustered on the trees he said, "Let 'em go; I'll get 'em later." Buyers had been thru the state, but the beekeepers were holding off to see what the market was going to be.

On Aug. 4 we attended a field meet at the Rhode Island State College grounds. While the attendance was not large, the meeting was enthusiastic. Such men as Arthur C. Miller and Allen Latham were present. Of the visit we had at the apiaries of both, we shall have something to say later.

The intervening days, 6, 7, and 8, we spent in New York and New Jersey investigating the honey situation. A report of this is given elsewhere editorially.

On Aug. 9 we attended an enthusiastic field meet of the Connecticut Beekeepers' Association at the Connecticut Agricultural College, Storrs, Conn. A large crowd was present, and the association seemed to be very much alive. Some interesting addresses were given during the afternoon of the 9th, when some field demonstrations were given.

On Aug. 10 we attended a field meet of the Worcester County Beekeepers' Association held at the apiary of Clesson Merriman, at Leominster. The attendance was large for a county meeting.

The last field meet was under the auspices of the Massachusetts Society of Beekeepers, held at Agricultural College, Hawthorne, Aug. 11. The following speakers were represented on the program: Arthur C. Miller, O. S. Fuller, Charles Stewart, Wilfred Wheeler, F. A. Smith, and E. R. Root. The attendance was good, and enthusiasm the best.

OUR HOMES

A. I. ROOT

Ye have heard that it hath been said, Thou shalt love thy neighbor and hate thine enemy. But I say unto you, Love your enemies.—*Matt.* 5:43.

But I say unto you which hear, Love your enemies, do good to them which hate you, bless them that curse you, and pray for them which despitefully use you.—*Luke* 6:27.

While I write on this 7th day of August the whole wide world more or less is talking war. Just about a year ago there were three Home papers in which we discussed more or less "war on Christian principles." Just after these talks quite a few of our old and good friends wrote me that they were surprised to see the author of the Home papers *justifying* war. You may recall that I gave as an illustration the Morgan raid that occurred here in Ohio in 1863. Let me repeat the circumstances.

This band of raiders without the authority of the Southern Confederacy crossed the Ohio River, came into Ohio, robbed banks and looted stores, and for a time our Ohio people seemed to feel themselves helpless. They helped themselves to everything they wanted. But whatever God's holy book may have to say in regard to this matter of *war*, our men and boys here in Ohio decided among themselves that under the circumstances war, and bloody war, was the *Christian thing* to do. They armed themselves with guns, pistols, and, if I am not mistaken, some of them had only hatchets and axes. They eventually surrounded the Morgan gang and took them prisoners, and succeeded in enforcing *law* and *order*.

I said a year ago that, under such circumstances, my belief was that they did the proper thing for Christian men to do, even to the killing of the bandit Morgan himself, especially when it came to protecting their wives and daughters and the little ones at home.

In yesterday's *Plain Dealer* (the day after Sunday, August 5) in four different places there were hold-ups and murders where drunken men had in their possession revolvers. Some of these things happened in the big city of Akron, only twenty miles from where I sit writing. Somewhere in our state—I think it was in one of the big cities, a policeman was called to quell a drunken row. The policeman ordered one of the drunken men to surrender and hand over his revolver. Instead of doing so, however, he shot the officer. This paper says the policeman may live, but it is doubtful. He was one of our best men, old in the business, and universally beloved. After the policeman had been shot, the man with the pistol frightened everybody else who attempted to interfere with him; and the community had quite a time to get him arrested and make him give up his weapon. Non-resistance is a nice thing to talk about, and we are sending out a little tract by the tens of thousands that recommends such a course among neighbors. But shall we let a drunken man go on?

I am sorry to say there are other things that make men crazy besides intoxicating liquors, or suppose we say cigarettes. The little tract I have mentioned hits the point exactly where it speaks of letting your mind run and dwell on real or fancied wrongs.

There have been two murders in Medina County recently because of grievances between two persons, and because the matter was allowed to grow and fester like a running sore. The first one was between two town officers. The second one was a very sad case of where a boy deliberately shot and killed his father. I presume this father *was* a drinking man, and had been cruel to his family. But the trouble that caused the murder was a quarrel over so small a matter as a few *seed potatoes*.

Let us now consider the present war that confronts the United States. I confess it has troubled and worried me, in regard to this whole matter of drafting and sending people to war, especially along the line I have been alluding to, "war on Christian principles." I have been so much helped by an account in the *Association News* (a Y. M. C. A. periodical) that I want to give the article here. It appeared recently, I am told, in the *North American Student* for May, 1917. Dean Bosworth is an old esteemed professor of the Oberlin Theological Seminary. Here is what he says about it. I have read it over several times; and I hope, my good friends, you will find it worth while to do the same:

THE CHRISTIAN WITNESS IN WAR.

The great majority of the American people believe that the time has come when the United States must enter the war. The United States has entered the the war; and the question is, How shall the Christian witness in war bear his testimony in the great Christian Enterprise?

1. In the first place, he bears his testimony by fighting from a Christian motive in face of strong temptation to fight from a lesser motive—*by fighting for a better world.* He feels that by fighting he will help to create a situation in which the common fatherhood of God and the international brotherhood of all men will find more perfect expression. The statement that it is democracy against monarchy is perhaps only part of the truth. The present war may turn out to be only a large item in a great world movement, the introduction of an era of internal revolution and class conflict that will include all nations, and more or less baptize all nations in blood.

We must not forget that entering the war to secure a better world logically commits us to the securing of a better America. The establishment of the Christian world ideal will involve changes in our own land. It means the purifying of American life from the gross social and industrial injustices of which we are this day guilty. Prussia designates not simply a geographical territory, but a disposition—a disposition which is found in all parts of the world and from which the world must be utterly purified—the disposition of the strong to override the weak. Our gross traffic in the daughters of the poor, our unjust treatment of the negro, the industrial wrongs inflicted on those who have no effective, orderly means of protest, are to be put away from American life as this rising tide of the less privileged classes surges on around the world.

2. The second note that sounds out from the Christian witness in war is *invincible love for the enemy* in face of the temptation to hate him.

This brings us to the great paradox of the Christian life—the Christian friendly to the man whom he must regard as an enemy, friendly to the man who has set himself resolutely against the good for which the Christian man resolutely stands. And yet it is this paradox that is so clearly found among the central assertions of Jesus:

> *Ye have heard that it was said, Thou shalt love thy neighbor, and hate thine enemy; but I say unto you, Love your enemies.*

The Christian witness in war asserts himself resolutely against the enemy with an invincible good will. He brings all the force of his being, physical and spiritual, to bear against the enemy, with an unfailing good will. Force is absolutely non-moral. It is no more good or bad than is electricity. Moral quality appears only in the disposition of the man who uses force. Force may be applied to the mutilation of the body, as it is by the surgeon, or to the destruction of the physical life, as it is by the executioner, and there is no immorality in the act so long as the disposition of him who performed it is free from all ill will.

The Christian soldier, in friendship wounds the enemy. In friendship he kills the enemy. In friendship he receives the wound inflicted by the enemy. He keeps his friendly heart while the enemy is killing him. His heart never consigns the enemy to hell. *He never hates.* After he has wounded the enemy he hurries to his side at the earliest possible moment with all the friendly ministrations possible. The Christian in war looks forward with an indestructible hope that some time and somewhere he and his enemy shall find common ground and move forward shoulder to shoulder in some great enterprise of God.

3. The Christian witness in war bears his Christian testimony *by the daily practice of immortality in the face of death.* If the life beyond is to be a vital reality, we must conceive it in terms of that which means most to us in the present life. We look forward to a *social immortality* and not merely to an individual existence.

We look forward to the future life, not as a personal bliss conferred as a reward of merit, not to unalloyed happiness, but rather to a *new and larger opportunity to work with others at great enterprises for the common good*—enterprises which will present many perplexing problems and lay heavy responsibilities upon us. The truly Christian man, the man fit for immortality, has long found his chief satisfaction in working with other men in all possible ways and at any cost for the common good. In entering the army he has put himself in readiness to make a supreme sacrifice for the common good.

The Christian testimony to the Great Enterprise is borne in war by fighting for a better world in the face of temptation to fight from some lesser motive; by invincibly loving his enemy in face of temptation to hate; by the daily practice of immortality in the face of death. What is before us, we do not know. The war upon which we have entered may be over in a few months. It may, thru some unexpected shifting of world conditions, be entering upon a longer and bloodier period than that thru which it has already passed. If it shall be soon over, God grant that the experience we are now passing thru may teach us in peace to apply ourselves with all the energy and self-sacrifice that we would show in war to the prosecution of the great Christian Enterprise.

Whether this great war be near its end or still near its beginning, the birth pangs of a new age are upon the world. The call is for men and women with the light of a new age on their faces. This light is on their faces because Christ their leader has shared with them his vision of a day when all men in the day's work everywhere find in God their father, in all men of every race their brothers, and in human life the beginning of immortality.

Please notice in the fore part of the above the expression "fighting for a better world." I believe that is exactly what our United States is doing. Not only are we enlisting in the war and fighting for a better world, but we are fighting particularly for a better *America.* There are things *besides* intemperance that are injuring our nation that ought to be righted. The shameful riot against the colored people at East St. Louis recently is an instance.

We now come to the point of our two texts—can one go to war and *fight* when he has love for the enemy he is fighting? The illustration about electricity struck me forcibly. There is no such thing as good or bad electricity. Electricity is a force. It does not have a soul. A surgeon when he cuts and mutilates a human body does this cutting in love. It may be a member of his own family, but it must be done to save life. The same is true with the executioner. Let me digress a little right here.

Once in my life I saw a man hanged on the gallows. I knew him quite intimately. It seems he was something of a gambler. One night while he and three or four others like himself were playing cards for money, he lost all he had, and it seemed he was mad about it. One of the crowd succeeded in scooping the whole pile from all the rest.

He did not *need* money, for he was a stock-dealer, and already had quite a roll of bills that he had recently taken for a bunch of cattle. This young man who committed the murder ascertained that the stock-dealer carried the roll home instead of putting it in the bank. During the night he went into that home, with a keen sharp knife, and killed the father and mother and a little child. He secured the coveted roll of bills, got away, and it was weeks or months before he was detected. He had a fair trial, and was condemned to death. Electrocution was not then in vogue. But there were a good many protests against what some people called murder, even at that date—more than fifty years ago. I was well acquainted with the sheriff who released the drop as he stepped off the platform. Perhaps I might confess that it was such a shock to my young nerves that I grasped hold of a buggy-wheel near where I stood to keep from fainting.

Now comes the point to this little story. Somebody, right away after the execution, either told or said to the sheriff that he, the sheriff, was a *murderer.* But most people protested. The sheriff simply acted as a servant of the people. After a long and expensive trial the community, and, I might say, humanity and the laws of our land, decided that Streeter would have to give up his life as a warning to other people who might be tempted to do likewise, especially if he should get off scott free as so many other point-blank murderers *do* get off *just now,* fifty or more years later. I said right away that our good sheriff was no more a murderer than every man, woman, and child in that great crowd that gathered to see a public hanging. Thank the Lord that public hangings are just now out of date in Ohio. If a man *must* be put to death for the good of community let it be done with few or no witnesses. Did this sheriff I have mentioned have any spite or ill will toward the man he was called upon to put to death? Surely not.

Let us now go back to the article I have quoted—the special point where it says. "The Christian soldier in friendship wounds the enemy." Once more, "In friendship he kills the enemy." Then notice the words, "He never hates." I hope that our boys who are enlisting will do their fighting without hate. And now comes the great point in this talk I have quoted: "After he has wounded the enemy he hurries to his side at the earliest possible moment, with all the friendly ministration possible. "If a midnight assassin gets into your home, do everything in your power to disarm him and render him helpless; and as soon as you have succeeded in disarming him or getting the upper hand of him, with love in your heart bind up his wounds, get a physician, and do everything in your power to undo the mischief you have done him. I think the above expresses the highest type of Christian love that it is possible to conceive of. And then comes the grand crowning sentence of the whole tract: "We look forward to the future life, not as a personal bliss conferred as a reward of merit, not to unalloyed happiness, but rather to a new and larger opportunity to work with others at great enterprises for the common good—enterprises which will present many perplexing problems and lay heavy responsibilities on us."

I confess the above gives me a better and grander view of future existence than I ever got before. Perhaps I am not exactly like other people; but with me, especially as old age comes on, I must be *busy* about something in order to be happy. Unless I am concerned in some "enterprise" I am unhappy; and the greater the enterprise (for the good of humanity), as our good brother expresses it, the greater is my enjoyment. In my previous Home paper I talked about "for whom are you working " and it rejoices my heart to feel that I can honestly answer that even in my old age I am working not only for a better *America* but for a *better world.* Brother Bosworth (and I hope he will excuse the liberty I take in so designating him) speaks about "fighting for a better world in the face of temptation to fight for some *lesser* motive."

Ever since I have been reading the above I have kept asking myself the question, "Is this thing I am planning to do for a better world, or is it for some particular need or want of A. I. Root?" And then wells up my old short prayer, "Lord, help." I desire not only to love my enemies, and to do good to those that hate me, but to ask God to help me, during the few years (or *months*) that I may be spared to work in this world, to give my whole time and attention to making the world better; and if it shall be possible, as the good brother suggests, may I be permitted to help make a *better "God's kingdom,"* when God calls me to "help," up there.

DEMAND AND SUPPLY; SOME SUGGESTIONS IN REGARD TO BUYING AND SELLING HONEY.

I think I mentioned some time ago that one of our beekeeping friends in Bradentown, Fla., was carrying his honey around from house to house and selling 3 pounds for 25 cents. He is quite a poultryman, and sells eggs in the same way; and while he is delivering eggs he can, of course, deliver the honey. He puts 3 pounds of honey in a fruit-jar and gets the jar back at his next call. Well, at our semi-monthly convention, others who were getting 10 cents suggested that he should raise the price. His reply was that he could get 10 cents from some customers, but it would take a great deal more time. At 8 cents it went right off rapidly without any arguing, and he could get back quickly to his work. Furthermore, he said that other beekeepers in the vicinity had been retailing at 6 and 7 cents. Another beekeeper who had been selling at 10 cents said he could probably get 12½ cents from most of his customers, but it would take so much more time that he preferred to make it an even 10 cents—that is, of course, without a "container." Well, just now, Aug. 1, I have a letter from the friend first mentioned, saying he had about 3000 pounds which he would like to sell all in a lump, as he had become tired of peddling it out. I asked one of our honey-buyers what he could probably give for it. He replied that if it was up to the average Florida honey we could allow him 9 cents, we standing the freight.

There you have the matter, friends—a beekeeper who is carrying his honey around to houses, and selling it at 3 pounds for a quarter when he could have spot cash 9 cents for the whole lot almost right at his door! Now, this is only an illustration of what is going on all over the United States, and perhaps more or less all over the world. It is because of the unsettled condition of prices, or a want of harmony, if we may so express it, among buyers and sellers. There is no such trouble, or very little such trouble, with butter and eggs, because producers and consumers, with the help (?) of the middleman, have decided about what would be a fair valuation considering both producer and consumer. And there ought to be a friendly discussion and agreement in regard to these matters. With the help of the Department at Washington I think this will soon be brought about. There are difficulties, I know; but when all parties shall agree to the spirit of our Lord and Master, such as is taught in God's holy book, there will be no trouble about settling on a fair price for all parties concerned.

Suppose we examine briefly some of the difficulties. First, there is a difference in quality of butter, eggs, and honey. Strictly fresh eggs ought to command a few cents more a dozen, and I believe they usually do. Cold-storage eggs, sold for exactly what they are, are usually several cents a dozen less.

Secondly, there is this matter of buying up the eggs and cornering the market until there seems to be a scarcity, and then the price goes up. And there might be gambling in butter, eggs, and honey a good deal as there is in wheat; but our government is trying hard just now to put an end to this sort of gambling. May the Holy Spirit give us wisdom and understanding in tackling this bad evil. You know I have strongly urged short cuts between producer and consumer; but even that may be abused as in the first illustration. At our Bradentown home in Florida eggs are frequently (or have been) down to 15 or 20 cents, say in March or April. Well, this price does not begin to pay for the feed for the chickens; and if eggs did not go up in the fall toward 40 to 50 cents it would nearly wind up the chicken business.

I have suggested cold storage so as to even things up; but the idea does not seem to have taken hold down in Florida. If you are reading the papers you are doubtless well aware that there has been a lot of severe criticism in regard to the middlemen, or those who buy and sell the necessaries of life. Some time ago a lot of good women in Cleveland made a boycott on eggs, pledging themselves not to use eggs until the price should come down. This had its effect, of course; but without being fully posted in regard to the matter they started their boycott just as the hens began to moult; and instead of blaming the hens they blamed the comparatively innocent middleman. Now, if it were not for these same middlemen or cold-storage men we should have a state of affairs ever so much worse than now. The troubles about the proper price of milk are not exactly like the things I have mentioned, because milk is very perishable. But I fear that many times both producers and consumers are criticising severely the middlemen who are really their friends—at least to a certain extent.

A little illustration occurred right in front of our homes here in Medina a few days ago. Just as the basswoods came into bloom an army of tussock moths or worms began defoliating the basswooods. Ernest got out his spraying-machine and gave them such a drenching with arsenate of lead that the worms were wound up in short order. I was a little afraid he might do harm as well as good, and consulted my good friend Neille, the deaf-mute, who is entomologist for the shade trees in the great city of Cleveland. He at once pointed out great clusters of a species of lady-bug on the trunks and branches of the basswood-trees. This insect was marshaling its forces to head off the tussock moth; but the arsenical poison killed friends and foes indiscriminately. In using arsenical poisons to head off the potato-beetle we kill the little spotted lady-bug that devours the eggs. For this reason I have tried to handle the potato-beetles by hand-picking, as far as possible.

In our last issue M.-A.-O. rather ridicules my plan of picking by hand the striped squash and melon bugs; and I wish to add right here what he failed to mention; and that is, that by a *very determined* "hand-picking," and leaving the crushed bugs scattered on the leaves of the plants I headed them off entirely; and my vines are now making great promise of both melons and squashes. But in order to come out a victor, for a little spell I looked after the bugs three or four times a day—in fact, every two or three hours, and they very soon learned that it was a matter of life and death if they did not get away just as soon as I came in sight. This is war time just now, and I believe in fighting; but shall we not be exceedingly careful to know exactly *before* we wage war to the bitter death that we do not by some mistake kill *friends* as well as *foes?*

Just a word about the difficulties in having one regular price for honey. First and foremost there is a vast difference in the quality of honey. Some people who buy honey may think that the 9-cent honey I have mentioned is a very small price. Let me explain that, in buying honey from different sources all over the United States, we get light honey and dark honey as well as fine-tasting honey, and some that is not so fine. But most of the honey we get from Florida is more or less dark-colored, and looks has quite a great deal to do with honey. From California and some other places we get fine honey or that which is almost white; in fact, they are often called "water-white." The water-white California sage honey from the mountains made quite a sensation years ago, and this has commanded ever since a very high price. In bottling honey when shipping it by the carload we try as far as possible to have the quality and color pretty nearly uniform; and this we do by making a blend. In order to have a sufficient amount of light-colored fine-flavored honey we sometimes pay almost twice the 9 cents I have mentioned, especially where we pay freight.

HEALTH NOTES

ROBBING SICK PEOPLE AND FRAUDULENT ADVERTISING

Mr. Samuel Hopkins Adams, and we have probably no better authority, tells us that ten per cent of the advertising before the general public is fraudulent. In our July issue my good friend M.-A.-O., page 572, mentions my crusade which I have carried on for almost half a century against fraudulent advertising; and I wish to put in a word once more right here, about the doctors and others who promise to do great things for your health for a certain sum of money. Most of them have a kind of "correspondence school" or health institute. Their regular fee is $50, or may be only $25; and if you read all their literature you may be inclined to think they are wonderful philanthropists; but if you neglect to bite at the first bait, in a couple of weeks or so they will give special reasons why they have cut the price in two for a limited time. If you do not bite then, still later you will get another offer. It may read something like this:

> "A lot of my good friends who have been brought to health by our treatment, urge, for the sake of humanity, that I should, for a brief time, cut the price still lower in order to bring it within the reach of people who are absolutely unable to pay the regular price."

And then they cut it down to one-fourth. In order to see just how they work I have followed the thing thru several times, as I have mentioned in past years. The correspondence school for the aid of the memory is an example. I think the price was $20.00; but after I waited until they came down to $5.00 I sent the money; and the information received was not only old stuff that has been in print more or less for fifty years, but the whole thing could be furnished for 25 cents.

Then there was a correspondence school to give instruction in growing potatoes. I wanted instructions particularly for my use in Florida; and the advertisement said it would be given personally so as to fit the need of any given locality. Well, the instructions I got gave lengthy details in regard to the Colorado potato bug in Florida.

The great instructor did not even know that this potato bug has not yet made its appearance in Florida.

While there are a good many and an increasing number of periodicals that not only discriminate but absolutely guarantee every advertisement, there is no end of periodicals that accept "any old thing" provided they get their pay for its insertion. Here is an illustration:

Pretty nearly every poultry-journal still advertises "The Natural Hen Incubator." I have shown this up every little while for the past fifteen or twenty years. The advertisement reads, "Price $3.00; no freight to pay." Now, any one would reasonably suppose they furnished an incubator for $3.00, freight paid; but the real truth is, these advertisers have no incubator at all, and never did have. All they send you for your money is a single sheet of paper telling you how to make some nests with little yards to accommodate a dozen sitting hens, more or less, at one time. The thing has been pictured and described in our agricultural papers again and again during the last thirty or forty years. I think they have some sort of patent on their particular method of constructing these combined pens for several sitting hens. If you are so much taken up with the thing that you send your $2.00, or a smaller sum, all well and good; but if you do not "bite" within a reasonable time you can have this single sheet of paper for less; and after a while for still less; and I think that finally, after you have held off long enough, you can get the whole "individual right" for 25 cents.

In our Jan. 1st issue, 1915, I wrote up at length an athlete who advertises physical training-courses, etc. To be fair I sent the advertiser a copy of what I was going to publish. He said if I put it in print he would sue for ever so many thousand dollars. It is now considerably over a year since the transaction; but I am still alive and exposing frouds.

My good friend H. W. Collingwood, of the *Rural New-Yorker,* showed up the same man, and in the same article he also mentioned a woman who advertised to give instructions so other women might become as good-looking as herself as she poses in various papers in her advertising. Well, friend Collingwood, in a kind letter to me in regard to these two health philanthropists, writes as below:

> As for Miss Blank, nothing has been heard from her yet. She may be waiting to see how the other comes out on his suit. Nothing in the world would do me better than to see this lady compelled to get up in the morning along with the ordinary farmer's wife, cook a good-sized breakfast for the hired men, then take care of the milk, clean up the breakfast dishes, go thru the motions of a good-sized wash, including a number of overalls of the aforesaid hired men. Then let her get up a good hearty dinner of baked beans, fried ham, potatoes, and a couple of apple pies on the side. Then let her do her baking of about 25 good-sized loaves of bread. By this time the clothes will come in off the line, and she will find about three square yards of holes to be darned up and well provided for. Probably a couple of the children will then come in. One has cut his finger, and the other has run a splinter into his toe. The woman must act as surgeon and comforter. Then a couple of the other children get into a scrap, and mother must come out and act as peace-maker. Then comes father out of the field, feeling very much discouraged. Things are going all wrong, and he wants to quit. The mother must act as pace-maker as well as peacemaker; and by the time father has been tuned up ready to take hold of things properly, the hired men are looking at the kitchen and thinking about supper. That must be put over at once, then the dishes are to be washed once more, the clothes are to be prepared for ironing next day, and half a dozen other jobs are waiting. Now, I want to have Miss Blank go thru that job and see how well she will keep her remarkable shape which she is so glad to put before the public and pay for the privilege of doing so. When Miss Blank goes a full week following the job I have outlined for the farmer's wife, and turns up smiling as she does in her advertisement, and with her shape as fine as it is when she started, I will guarantee to buy her method and have it applied to five different farmers' wives; but if I were a sport I would bet that Miss Blank would quit before supper time. That's what I should like to say about Miss Blank; but I suppose if I did we should get another libel suit for a million dollars; and with the high cost of paper, and the coming charge for postage, libel suits are not assets. At any rate, it seems to me so perfectly absurd for these creatures to talk as they do, and try and get the money out of sensible people for going thru their motion. I have been told by those who have patronized these athletic advertisers that they are expected to lie down flat on the floor, roll themselves over and over, kick up their heels so as to have their toe come over and touch their head, and, for all I know, stand on their heads at times. Surely the farmer's wife whose daily stunts I have outlined above has little time for turning somersaults, dancing the tango, and other things which seem to keep Miss Blank in shape.
>
> New York. H. M. Collingwood.

I have thought best not to submit names, as most of our readers will notice; and one reason why I give this portion of the letter is that friend Collingwood so graphically describes the woman spoken of in Proverbs —the one whose "price is far above rubies."

I have given the above because it pays tribute to a class of women mostly from the farms of our nation who, I greatly fear, have never had the full credit that belongs to them. When this wicked war is ended, and peace and good will shall prevail, it is my honest belief that the credit will be due to the good wives out on the farm as much as to the manhood who went forth and crossed the ocean to do battle for the perpetuation of the stars and stripes. Truly " her price is far above rubies."

GOATS AND GOATS' MILK.

From the number of letters that are coming continually in regard to goats, especially goats' milk, for the babies, it would seem I have seldom struck upon anything of such general interest; and while we have quite a lot of letters, I have been feeling for some time that I wanted something in regard to the matter from good authority, and, if the good friends will excuse me, something from some source where there can be no suspicion that the party or parties are interested in making sales; and it occurred to me that our various experiment stations of the different states should give us something definite and up to date; therefore I wrote to the director of our Ohio Experiment Station as follows:

Friend Thorne:—If you have had time to look over our journal you may have noticed the many articles and inquiries in regard to goats for milk. Now, I don't suppose you have made any tests of goats at your station; but can you tell us if the stations of any other state have made similar experiments? We have several letters from parties who say they get two quarts and sometimes three quarts a day of goats' milk. I believe they are kept more for babies, or babies in poor health, than for any other purpose. The testimonies in regard to saving babies' lives by the use of goats' milk seem to indicate that it certainly has remarkable virtues in that way. I know there are several goat periodicals; but some evidence from an experiment station would be worth more to me than anything else. Would it be outside of your province to get a goat or two to be kept on the station farm?

Medina, O., May 22, 1917. A. I. Root.

In response to the above I received the following:

Mr. A. I. Root:—Director Thorne has handed to me your letter regarding milch goats, not because I have charge of dairy work here, for Professor C. C. Hayden has charge of that, but because I own some milch goats. I have found them to be rather generous producers. One gave about 3 quarts per day for awhile after kidding last year, and a two-year-old 2½ quarts now I should judge. I have sometimes noticed an undesirable flavor; but aside from these times the milk is of exceptionally fine quality, altho ours seems not to be so high in fat as some report. One of my does milked 10½ months, and would have milked longer had I not dried her up. Mr. C. P. Funk, of Wooster, who bred my foundation does, has eleven does of different ages. We have at the head of our flocks the buck Balmat 336, whose dam, imported Loretta, is said to have yielded 7 quarts of milk per day when owned by Mr. David Zook, who lives near Smithville, a few miles from here. Mr. Zook has a rare fund of goat lore, and I would suggest that you see or write him if you are interested in goats.

Your letter is referred to Professor Hayden, who is far better able than I to give data regarding technical studies relative to the milch goat and her products.

Assuring you that we shall gladly serve you whenever possible, I am

Yours very truly,

Wooster, O., May 24, 1917. B. E. Carmichael.

Please notice, friends, the concluding sentence. If I am correct, the experiment stations of the different states are always ready, not only to give us the information they can give, but also to hunt up facts, and, furthermore, make experimental tests of anything concerning the public welfare—especially anything pertaining to milk, butter, and cheese, and the health of our babies. Do not be backward about applying to your own station when you want unbiased and reliable information.

SWEET CLOVER IN CALIFORNIA, AND SOMETHING ABOUT GOATS.

Mr. Root:—I enclose an article on milch goats. You asked to hear from growers of sweet clover, in regard to its blooming the first year. I think it always blooms the first year in California; at any rate, it does in the valleys. Last year I purchased my seed of the Dadants, and it is just the same as we have always had here and up north where we lived. It bloomed profusely after cutting twice. I have been pasturing the field this year, and now it is in full bloom. Of course, it is not very tall now, as stock keep it down.

Manteca, Cal. Ernest E. Warren.

The above reminds me that for two seasons I have had yellow sweet clover in Florida that grew very rapidly to a height of three or four feet, and blossomed only three or four months after sowing. This would indicate that it behaves there very much as in California. These plants, however, have yellow bloom. I have never yet succeeded in getting the white sweet clover to grow and blossom at our Florida home.

Below is the clipping on goats.

TYPES OF ARISTOCRATIC GOATS.

And thou shalt have goat's milk enough for thy food, for the food of thy household, and for the maintenance of thy maidens.—Proverbs 28:25.

But there are goats and goats, each having its emphatic advocates, and each its peculiar merits, no doubt. In Switzerland the goat is the family cow, and her product a considerable item of revenue besides. The supply of pure-bred Toggenburg and Saanen goats in this country is derived principally from a stock brought over from Switzerland in 1904, together with a few that were imported prior thereto, all importations since 1905 having been prohibited by the United States Government. The Toggenburg has a delicately formed head, upright ears, and a graceful, deerlike appearance. It is of medium size, with a slender neck and of a drab color with white or grayish markings. The milk production is greater in quantity, but less rich than that of the Anglo-Nubian and some other breeds.

The Saanen, also a pure-bred Swiss goat, is considerably larger than the Toggenburg, usually hornless, and of a creamy-white color. An expert judge of these creatures, Mr. F. S. Peer, who made the large importation of Swiss goats in 1904, says:

"Taking a given number of each breed as they come, I would expect the Toggenburgs to show the largest total yield; but among the best of each breed I would expect the Saanen to win."

The Anglo-Nubian is an English cross of the Nubian with a pure English doe, made half a century ago, and has become a distinct breed. It is of various colors, preferably black and tan or reddish brown, frequently with black or black and white markings. It has a marked Roman nose, heavy pendant ears, and the female is without beard. The milk production is less in quantity than that of the Swiss goats, but richer in butter fats. The breeders of this goat claim that the buck is practically odorless, the milk of a very superior quality, while another important feature of value is that the kidding age is reached earlier. It would seem, therefore, that the cross of Anglo-Nubian buck with a Toggenburg or Saanen doe should bring exceptionally promising results, both for milk and kidding—"a veritable pocket edition of the modern milch cow, bound in goatskin," as one of our correspondents happily phrases it.

Since the goat is free from tuberculosis, its milk is far more valuable than that of the cow for the nurture of babies and invalids, and it is of first importance also for the manufacture of cheese and fine confectionery. Probably we shall not arrive at a complete understanding of the full worth of this product until it has become more generally available; but it is even now evident that the goat is an important institution.

It may also be said that it is conceded to have attained a higher degree of perfection on the Pacific Coast than elsewhere in America.

Mary B Harris.

BEEKEEPING IN SOUTHWEST FLORIDA; ALSO SOMETHING IN REGARD TO PRICES FOR HONEY.

Mr. Root:—

My average from palmetto is about 34 pounds per colony. I have secured decidedly the poorest results from my home apiary, and I have concluded to move almost all of the bees in the home apiary to other locations. My Cedar Hammock apiary, less than two miles to the southeast, has given an average of over 50 pounds.

At Cortez and on this side of the bay I have 60 colonies. These locations are not the best for palmetto, but they have never failed me in giving a good yield of seagrape and mangrove. I was at Cortez yesterday, and found the hives filling from seagrape. Mangrove yields till Aug. 1.

This week I expect to move more bees to these apiaries. It is quite a job to move overflowing colonies with one or two supers, but I think it will pay.

Last Thursday a movement was set on foot which I believe will result in decided good to the beekeepers of this section. Mr. Christopher asked me to come to his place and meet other beekeepers with the object of uniting on a uniform price for our honey.

The nine beekeepers present represented over 1300 colonies of bees. At our next meeting we hope to have twice as many present, who will represent many more bees.

In regard to a uniform price, it was agreed that honey sold in a container less than the 60-pound can should be sold for not less than 10 cents a pound net. That is exclusive of cost of the container. Sixty-pound cans to be sold for not less than $6.25, or $12.50 a case. By the barrel at 10 cents, including the barrel. I am not sure we can sell at these prices. A. E. AULT.

Bradentown, Fla., June 10.

I heartily indorse the plan of having beekeepers meet together and agree on prices for honey; and if some one in the vicinity, as often happens, insists on selling at a lower price than agreed on, let the association take all of his stock. This is exactly what is done with butter and eggs and almost every other staple article of food; and in many other ways co-operation between the beekeepers of a locality will be very helpful.

The above report also illustrates the fact that very different results may be had from apiaries only three or four miles apart.

DISARMAMENT, AND SINKING TO THE BOTTOM OF THE SEA THE IMPLEMENTS OF WAR THAT HAVE COST UNTOLD MILLIONS, INSTEAD OF THE SHIPLOADS OF GRAIN, THE PRODUCT OF HONEST LABOR.

After Our Homes for this issue was put in type I came across something in the *Plain Dealer* for Aug. 9 that hits right along in the same line. I make two extracts below:

> The controlling United States view is that the present world-wide conflict has become a war to end war.
>
> Officials believe strongly, too, that the hour may be nearer than any one thinks when the warring nations may be able to reach an agreement.
>
> Disarmament, the dream of statesmen thru the ages, would prove a blessing to mankind immeasurable in its effects. If it were realized, everybody could feel that the tremendous sacrifices of this war had not been made in vain.

If I get the correct idea of "disarmament" as expressed in the above, it means that, instead of continuing to destroy human life and sinking shiploads of grain that have cost here in America no end of hard and severe toil, we should sink to the bottom of the ocean the implements of war that have cost untold millions because no nation on earth has any more need of such creations that must have come from the prince of darkness and from the bottomless pit. Then shall be ushered in the glad time when God's kingdom *shall* come, and *his* will be done on earth, instead of that of Satan and his allies.

NO MORE GIVING OR RECEIVING TIPS IN TENNESSEE.

The item below I clipped from the corner of a bill of fare on one of the dining-cars while passing thru Tennessee.

> ANTI-TIPPING LAW OF TENNESSEE.
>
> Under the law of Tennessee, adopted March 24, 1915, any person giving to any employee of this company a tip or gratuity; any such employee receiving or accepting a tip or gratuity; and any officer or agent of the company wilfully permitting the giving and receiving of such tip or gratuity, is subject to a fine of not less than $5, nor more than $25, for each offense.

The above, as I understand it, is to prevent the waiter, especially the colored waiter, from giving his sole attention to patrons who are liberal in giving tips, and letting common people, or every one who finds it hard enough to pay the printed prices, to get along as best he can. I for one will rejoice to see this anti-tipping law become not only national but world-wide.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

Clover-basswood honey, well ripened, of excellent quality, put up in bright new 60-lb. cans.
O. W. Bedell, Earlville, N. Y.

FOR SALE.—4000 pounds basswood honey out of combs not bred in; in double-cased 60-pound cans; 15 cents per pound. Sample 10 cents.
A. S. Tedman, Weston, Mich.

FOR SALE.—Clover honey in sixty-pound cans, 15c per pound; No. 1 white comb, $4.50 per case of 24 sections; No. 2 white, $3.50 per case, six cases to carrier. H. G. Quirin, Bellevue, Ohio.

FOR SALE.—Raspberry, basswood, No. 1 white comb, $3.00 per case; fancy, $3.25; extra fancy, $3.50; 24 Danz. sections to case, extracted, 120-lb. cases, 15 cts. per lb.
W. A. Latshaw Co., Clarion, Mich.

FOR SALE.—White-clover honey of the finest qualtiy; was left on the hives until thoroly ripened; it is put up in new 60-lb. tin cans. Price $8.50 a can. Sample by mail 10c.
G. A. Barbisch, Rt. 1, La Crescent, Minn.

RASPBERRY HONEY.—Was left on the hives until thoroly ripened by the bees. It is very delicious. It is put up for sale in 60-lb. tin cans. Price $9.00 a can; 1-gal. cans of 12 lbs. net weight, $2.00 each. Sample by mail 10 cts., which may be applied on any purchase of honey.
Elmer Hutchinson, Rt. 2, Lake City, Mich.

HONEY AND WAX WANTED

WANTED.—Comb and extracted honey.
J. E. Harris, Morristown, Tenn.

WANTED.—5000 lbs. white-clover extracted honey; state price, how packed; send sample. L. P. Zimmerman, 436 E. Market St., Louisville, Ky.

WANTED.—Comb and extracted honey at jobbing prices. National Honey Producers' Association, Kansas City, Mo.

WANTED.—Carload or less white and darker extracted. State quantity, quality, packing, and lowest price. HOFFMAN & HAUCK, Richmond Hill, N. Y.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—White and light amber extracted honey, in any quantity. White clover and raspberry preferred.
I. J. Stringham, 105 Park Place, New York.

WANTED.—Carload or less lots white and buckwheat comb honey. State quantity, grading, section size, and lowest price. HOFFMAN & HAUCK, Richmond Hill, N. Y.

WANTED.—Extracted light honey of good flavor, white clover preferred. Kindly send sample, and quote lowest price delivered at Richmond, N. Y.
J. Stevenson, Richmond, S. I., N. Y.

WANTED TO BUY a quantity of dark and amber honey for baking purposes.
A. G. Woodman Co., Grand Rapids, Mich.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—40 gross individual jars, silver-plated tops. What offers?
J. Stevenson, Richmond, S. I., N. Y.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

FOR SALE.—One-ton Reo truck in good shape. A bargain for the man who needs it. Address No. 24, care of A. I. Root Co., Medina, O.

150 envelopes, 150 letter-heads, size 6 x 9½ inches, printed and mailed for $1.00. Samples free. Sun Co., East Worcester, New York.

SEND TODAY for samples of latest Honey Labels. Not only the most attractive, but also the lowest in price. Samples free. Liberty Pub. Co., Sta. D, Box 4-E, Cleveland, Ohio.

RENDER your own combs and cappings without trouble or expense. Make foundation for yourself and others easy. Address J. J. Angus, Grand Haven, Mich.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; Gleanings and all kinds of bee literature. Get the best. Catalog free.

WANTS AND EXCHANGES

WANTED.—Albino queens. Who has Albinos?
D. E. Lhommedieu, Colo, Iowa.

WANTED.—Novice extractor, also wax press. Lowest price. J. Stevenson, Richmond, S. I., N. Y.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED.—To buy 200 colonies of bees. Must be on wired combs of foundation. Also extracted honey outfit. Address Elzie Perkins, Valley View, Ky.

TO TRADE.—New 6 x 8 view camera outfit; speed lens; cost $65. Want combs, hives, supers, extractor, or cash. Art Tucker, Shiloh, Ohio.

WANTED.—To hear from parties having foundation-mill to sell, either new or needing slight repairs.
J. J. Angus, Grand Haven, Mich.

WANTED.—To exchange a one-minute "Mandel-Ette" camera for 10-fr. hives or supplies. Camera cost $5.00. E. A. Rahn, Taylor Ridge, Ill.

Wanted, at very low price, 60 to 70 colonies of bees, with accessories.
J. Schick, 2318 Irving Pk. Bld., Chicago, Ill.

WANTED.—Shipments of old comb and cappings, for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

GOATS

FOR SALE.—Two ⅞ Nubian buck kids, five ¾ doe kids, one yearling, and one 4-year-old.
R. M. Collins, 630 S. 22d St., Muskogee, Okla.

REAL ESTATE

FOR SALE—Most lovely spot in south Florida; ten acres rich soil near city; improved on main road. Ideal for honey production; at sacrifice.
J. A. Shade, Sarasota, Fla.

FOR SALE.—126 colonies of bees and extras. Also home consisting of two acres, with improvements on, in the southeastern corner of South Dakota. A No. 1 honey location. Call or write
F. A. Dahl, Gayville, S. D.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free. C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

FOR SALE.—Small truck and poultry farm on improved road within 12 miles of one of the best markets in Ohio. Large house and barn; 2 greenhouses, 18 x 60 ft.; all buildings in good condition; apple orchard in bearing, and 40 apple and peach trees one year old. Other fruit of all kinds. A bargain. For particulars write W. L. Niederhiser, Rt. 2, Calla, Ohio.

THIS LITTLE FARM IN VIRGINIA is an ideal poultry and fruit proposition; located in fine community at railroad station and general store in beautiful Shenandoah Valley; 2 miles from good town; modern five-room bungalow, nicely furnished; price $1250; easy terms. Send for magazine and list of farms from $500 up. F. H. LaBaume, Agr'l Agt. N. & W. Railway, 246 N. & W. Building, Roanoke, Va.

FOR SALE.—Two large lots, large six-room house, electrically lighted, good cemented cellar; cannot be beat for wintering bees; good well, cistern, number of fruit-trees, 35 swarms of bees; 60 10-fr. dovetailed hives, 500 Hofffman-fr. wire combs not over two years old; all fixtures to go with extracting. All kinds of factory work near by. A bargain. This ad. will not appear again. Write J. S. Kendall, Chemung, Ill.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

PHELPS queens will please you. Try them and you will be convinced. C. W. Phelps & Son.

Well-bred bees and queens. Hives and supplies.
J. H. M. Cook, 84 Cortlandt St., New York.

FOR SALE.—Bees, queens, and honey in their season. H. G. Quirin, Bellevue, O.

FOR SALE.—Golden Italian queens. Untested, 50 cents each. J. F. Michael, Winchester, Ind.

FOR SALE.—40 colonies of Italian bees. For particulars address Henry S. Smith, Brooklyn, Wis.

When it's GOLDENS it's PHELPS. Try one and be convinced.
C. W. Phelps & Son, Binghamton, N. Y.

Business first queens. Select untested, $1.00 each; $9.00 a dozen; no disease. Price list free.
M. F. Perry, Bradentown, Fla.

Three-banded Italian queens and a few hundred pounds of bees for sale. Safe arrival guaranteed.
J. A. Jones, Rt. 3, Greenville, Ala.

Gray Caucasian Queens, untested, $1.00; select untested, $1.25; tested, $1.50; select tested, $2.00.
H. W. Fulmer, Box G, Point Pleasant, Pa.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

Tested leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Vigorous prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing. A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Italian queens, THE HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

FOR SALE.—450 hives of bees, all well located in best alfalfa and sweet-clover localities; also shop and fixtures in town.
W. L. Porter, Caldwell, Idaho.

FOR SALE.—Small apiary of 25 colonies Italian bees in 8-frame hives; quantity of supers, new hives, and accessories.
O. Flinch, Huntington,, N. Y.

Queens that boost your bank account, three-band or golden. Untested, 75 cts.; tested, $1.00; select, $1.50. J. B. Marshall & Son, Rosedale Apiaries, Big Bend, La.

FOR SALE.—190 colonies of Italian bees. Ideal location for rearing queens and combless bees; two miles from New Orleans.
M. Stevenson, Westwego, La.

Finest Italian queens, June 1 to November, $1.00; 6 for $5.00; my circular gives good methods. Ask for one.
J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

FOR SALE.—Bright Italian queens at 65 cts. each; $6.50 per doz.; ready April 15. Safe arrival and satisfaction guaranteed.
T. J. Talley, Rt. 3, Greenville, Ala.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each.
Henry S. Bohon, Rt. 3, Box 2112, Roanoke, Va.

Golden and three-banded Italian queens for July, Aug., and Sept. Now, only 50 cents each, 6 for $3.00, 12 for $6.00, virgins 30 cts.
G. H. Merrill, Pickens, S. C.

FOR SALE.—Golden Italian queens of an improved strain; the bee for honey, hardiness, gentleness, and beauty. Untested, $1.00; tested, $2.00.
Wallace R. Beaver, Lincoln, Ill.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price $1; 6 for $5. Wm. S. Barnett, Barnetts, Va.

Bright Italian queens for sale at 60 cts. each. $6.00 per doz.; virgins, 25 cts. each. Safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

FOR SALE—Three-banded Italian bees and queens from the best honey-gathering strains obtainable. Untested queens, 75 cts.; 6, $4.25; 12, $8.00. Tested queens, $1.50 each.
Robt. B. Spicer, Wharton, N. J.

Untested Italian queens for sale.—1, $1.00; 3, $2.75; 6, $5.00; 12, $9.00. Satisfaction guaranteed.
F. L. Johnson, Mt. Airy, N. C.

ITALIAN BEES AND QUEENS.—1, $1.00; 12, $9.00. Satisfaction guaranteed.
A. E. Crandall & Son, Berlin, Conn.

"She-suits-me" bright Italian queens; $1 by return mail till Oct. 1.
Allen Latham, Norwichtown, Ct.

FOR SALE.—Warranted queens from one of Dr. Miller's breeders, 50 cts. each.
Geo. A. Hummer, Prairie Point, Miss.

FOR SALE.—84 colonies of bees on wired Hoffman frames, nice clean combs in 10-frame hives; no disease; 25 extra hives; 85 comb-honey supers.
Wheeler's Comb-Honey Apiaries, Rhinecliff, N. Y.

FOR SALE—17 colonies in 10-fr. and 43 colonies in 8-fr. Hoffman; excellent strain, 3-banded, no disease. Owner selling to stock large farm.
E. C. Schiesser, Rt. 1, Liverpool, N. Y.

QUEENS OF SUPERIOR QUALITY.—Untested, 75c each, $8.00 per doz.; select untested, 90c each, $9.00 per doz.; select tested, $1.50 each, $15.00 per doz.; extra select breeder, $5.00.
H. N. Major, South Wales, N. Y.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; each, $1.00; 6, $5.00; tested, $2.00; breeders, $5.00 to $10.00.
J. B. Brockwell, Barnetts, Va.

My bright Italian queens will be ready to ship April 1 at 60 cts. each; virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

None but the best Queens are sent out by us—three-band Italians that are guaranteed to give satisfaction. Untested queens, 75c; $8.00 per doz.; tested, $1.00 each. No disease. Orders filled promptly. J. W. K. Shaw & Co., Loreauville, La.

Golden Italian queens that produce gentle golden bees; good honey-gatherers; no foul brood. Select tested, $1.25; tested, $1.00; untested, 65 cts.; 6, $3.75; 12, $7.00. No nuclei or bees for sale.
D. T. Gaster, Rt. 2, Randleman, N. C.

Queens, Queens, Queens. We are better prepared than ever to supply you. Untested, 55c each; tested, $1.00 each; select tested, $1.65 each. See our big illustrated ad. on first leaf of this journal.
W. D. Achord, Fitzpatrick, Ala.

The demand for PHELPS' GOLDENS has been so great that we will not be able to fill orders for less than $12.00 a dozen for the remainder of the season. Single queens $1.00 as usual. THEY ARE BEAUTIES! Try one. C. W. Phelps & Son.

FOR SALE.—Three-band Italian queens from best honey-gathering strains obtainable. Untested queens, 75 cts.; 6, $4.25; 12, $8.00. Safe arrival and satisfaction guaranteed.
W. T. Perdue, Ft. Deposit, Ala.

Golden Italian queens from a breeder that was a first-premium winner at Illinois State Fair in 1916; untested, 75 cts.; six for $4.25; doz., $8.00; select untested, $1.00; 6 for $5.00; 12 for $9.00; tested, $1.50; 6 for 8.00.
A. O. Heinzel, Rt. 3, Lincoln, Ill.

PHELPS GOLDEN ITALIAN QUEENS combine the qualities you want. They are great HONEY-GATHERERS, BEAUTIFUL and GENTLE. Mated, $1.00; dozen, $12.00; tested, $3.00: breeders, $5.00 and $10.00. C. W. Phelps & Son, Wilcox St., Binghamton, N. Y.

QUEENS.—Improved three-banded Italians, bred for business, June 1 to Nov. 15, untested queens, 75 cts. each; dozen, $8.00; select, $1.00; dozen, $10.00; tested queens, $1.25 each; dozen, $12.00. Safe arrival and satisfaction guaranteed.
H. C. Clemons, Rt. 3, Williamstown, Ky.

North Carolina-bred Italian queens of Dr. C. C. Miller's famous strain of three-banded Italian bees; July 1 until Oct. 1, untested, 75 cts.; per doz., $8.00; tested, $1.00; doz., $11.00; select tested, $1.50. Safe arrival and satisfaction guaranteed.
L. Parker, Rt. 2, Benson, N. C.

My choice northern-bred Italian queens are hardy, vigorous, and prolific. May and June, untested, $1.50; select unt., $2.00; tested, $3.00; after July 1, unt., $1.00; select unt., $1.25; tested, $2.00; select tested, 2.50. Free circular.
F. L. Barber, Lowville, N. Y.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money refnuded by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

Put a good queen in each colony now, when good queens can be had promptly at low prices. The wise beekeeper does not buy queens in spring when they are scarce, high in price, delivery uncertain. He buys now and insures disease resistance, safe wintering, and a good honey crop. Our Italian queens give these three qualities and are now at their best; 1, 75 cts.; 6, $4.25; 12, $8.00; 25, $15.00; 100, $50. J. B. Hollopeter, Queenbreeder, Rockton, Pa.

FOR SALE.—75 colonies of fancy Italian bees, guaranteed free from disease; all combs built from full sheets of foundation and wired; nearly all young queens; a fancy comb-honey strain; are second to none as honey-gatherers and hardiness; fixtures for both comb and extracted honey. Also farm of 50 acres in an A No. 1 location for clover, basswood, and buckwheat. Reason for selling, must seek milder climate for health; low price for quick sale. Thos. Broderick, Rt. 13, Moravia, N. Y.

QUEENS FOR SALE.—Italian queens that produce workers of a honey-gathering quality that are excellent; none better for an all-purpose bee. Red-clover three-banded Italians are the kind to have. I have selected my strain from the biggest and best breeders of the U. S. They are fine. Send in your orders. I am closing now for winter. Untested, 1, 75 cts.; doz., $6.50; select untested, 1, $1.00; doz., $7.50; tested, 1, $1.25; select tested, 1, $1.50; extra select tested, 1, $2.00; best breeders, $10; fair breeders, $5.00. Bees by pound. See advertisement of my bees, July and August GLEANINGS.
H. B. Murray, Liberty, N. C.

Golden three-band Italian and Carniolan queens: Virgin: 1, 50c; 6, $2.50; 12, $4.00; 100, $25.00. Untested: 1, 75c; 6, $4.20; 12, $7.80; 100, $60.00. Select untested: 1, 85c; 6, $4.80; 12, $9.00; 100, $70.00. Tested: 1, $1.00; 6, $5.40; 12, $10.20; 100, $80.00. Select tested, 1, $1.25; 12, $13.80; 100, $100. Breeders: $3.00 each. Bees in combless packages: ½ lb., 75c; 1 lb., $1.25; 2 lbs., $2.25. Nuclei: 1 frame, $1.25; 2 frames, $2.25; 3 frames, $3.00. Add price of queens wanted. We guarantee safe arrival and no disease.
C. B. Bankston, Buffalo, Tex.

Queens of my own and Dr. C. C. Miller's 3-banded select stock the rest of this season, 75 cts. each; $65.00 per 100; tested, $1.50 each; $15.00 per dozen; breeders, $5.00 and $10.00. A fine breeder sent on two frames of brood in nuclei, $10.00.
Curd Walker, Jellico, Tenn.

I think so much of my Walker queens and bees that I have been able to induce my friend Mr. Walter Hall to try one. I am quite sure he will find them as good as I recommend. I have in my apiary queens from four different breeders of queens, but the Walker beats them all. When I want more queens yours are good enough for me even if the price is a little steep. J. M. Meadows, Dorton, Tenn.

ITALIAN QUEENS, northern-bred, three-banded, highest grade; select untested, guaranteed; queen and drone mothers are chosen from colonies noted for honey-production, hardiness, prolificness, gentleness, and perfect markings. Price, one, $1.00; 12, $9.00; 50, $30.00. Send for circular.
J. H. Haughey, Berrien Springs, Michigan.

HELP WANTED

WANTED.—An experienced apiarist, also to work in winter and bad days in factory or supply house, year-round work. State wages, age, and experience.
Carl F. Buck, Augusta, Kans.

HELP WANTED.—Factory positions, men for lumber-yard and woodworking-machine operators; boys over 16 years for helpers on woodworking-machines; women and girls over 17 years to work on light manufacturing. Steady employment to competent workers. Apply by letter, giving previous experience, if any. Address The A. I. Root Co., Medina, O.

Special Notices by A. I. Root

Just at present our stock of "The Natural History of the Honey Bee," by H. v. Buttel-Reepen, is exhausted, and we shall be delayed in filling orders till a new issue now in process of printing can be gotten out. We hope to complete this work by Oct. 1.

THE POTATO-PENS UP TO DATE.

Just now, August 11, we have notice of two potato-pens in Columbus, Ohio, that were planted to *early* potatoes, and the vines have matured and the potatoes have been dug. One of them, says the owner, "did not get as many potatoes out of the pen as he put in for seed." The other says, he "reaped half a bushel from it, all from the top. They were all good potatoes, however." We now await with "bated breath" a report from Hendricks, of Kansas City, Mo., who invented the potato-pen forty years ago, but has just recently given it to the world. How many potatoes will *he* get from the pen on which he is bestowing such extra pains? See page 559, July GLEANINGS.

WORLD-WIDE PROHIBITION.

Since GLEANINGS has got to be a monthly instead of a semimonthly, it is a hard matter for me to note the progress prohibition is making, because the news I give will probably be stale before it appears in our monthly. But here is a brief letter from one of our beekeeping friends in Porto Rico that I think will please you as it pleases me. It was written to my son-in-law, Mr. Boyden:

> *Mr. A. L. Boyden*:—Please inform Mr. A. I. Root that Porto Rico was voted dry by about 35,000 votes yesterday. *Some* of the propaganda *we* have been responsible for when traveling over the hills. For four years demon rum will be banished, nor can there be anything imported for four years. There is a lot of kicking because the Jones Act provided prohibition. The liquor interests wanted a referendum, and they got the "steam roller."
>
> J. M. J. SIEBERT.
>
> Mayaguez, Porto Rico, July 17.

In a letter from Superintendent Crooke, of the Anti-saloon League of Florida, dated Aug. 8, I find the following:

> We are in the hottest fight ever waged in Jacksonville. The President yesterday closed the saloons in Pensacola, Key West, St. Augustine, and fourteen saloons in Jacksonville, which were located within half a mile of the armory.
>
> C. W. CROOKE.
>
> Jacksonville, Fla., Aug. 8, 1917.

In regard to Key West, I clip from the Manatee River *Journal* as follows:

> Prohibition went into effect in Key West at 6 o'clock Saturday night in accordance with the proclamation of President Wilson, of July 25. Secret-service men notified all the saloons that they could not open within half a mile of the military reservations. The island of Key West is one and one-half miles wide and four and one-half long. The reservation includes every section of the island.

Free!
A 50-gallon barrel of Scalecide free to any any one who will suggest a *fairer* guarantee than that given below.

"SCALECIDE"

As proof of our confidence and to strengthen yours, we will make the following proposition to any fruit grower of average honesty and veracity:
Divide your orchard in half, no matter how large or small. Spray one-half with "SCALECIDE", and the other with Lime-Sulfur for three years, everything else being equal. If at the end of that time, three disinterested fruit growers say that the part sprayed with "SCALECIDE" is not in every way better than that sprayed with Lime-Sulfur, we will return you the money you paid us for the "SCALECIDE".
Send for new free booklet, "Profits in Fall Spraying".

B. G. Pratt Co., M'f g Chemists
50 Church St. Dept. 6 New York

PATENTS Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.
Chas. J. Williamson, McLachlan Building
WASHINGTON, D. C.

SWARMING CONTROLLED . . . .
If interested, address Charles Thompson,
Marion, Iowa, for information.

BEE SUPPLIES Send your name for new catalog.
Dept. T, CLEMONS BEE SUPPLY CO.,
128 Grand Avenue, Kansas City, Mo.

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Please always, **always, ALWAYS**, when writing to have the mail address of your "Gleanings" changed, give the former post-office address. Please do. It will save the publishers much time and inconvenience.

THE A. I. ROOT CO., Publishers.

AROUND THE OFFICE

M.-A.-O.

The only way I can stick in ''Gleanings'' at all any more anywhere is by saying the very first thing in this September issue that a lot of things I have written ain't so and take it back. So I say it ain't so and take it back. For instance, that the squash bugs in my garden that escaped some one's plan of death-by-fright got as large and noisy as partridges. I take part of that back. I'll skin back the statement about Mel Pritchard's thinking the drones in the greenhouse mating experiment didn't know a virgin queen from an air ship. Mel couldn't a-known that. But I won't take very much more back for nobody, so I won't. I am sufferin' back here in these back pages of ''Gleanings'' as an apostle and standard-bearer of truth, and I am going to keep on apostling and standard-bearing till the cows come home. I am telling a durned sight more truth than I am of the other kind back here, and if I get kicked out and martyred, it's because the editors can't stand it—so it is. I am going out thru the back cover-page with the banner of truth and progress flying, when I go. But in a good many ways I am like the mighty Muscovite revolution—once started they can't quell me. But, as I said up above, I take it back—just enough, that is.

* * *

A friend of mine down at Ada, O., who is a beginner, made a bull's eye and rang the bell when he shot this into some of the high lords of beekeeping in a letter to me. Here's his shot: ''I am just a poor beginner, and most of the time don't know how to proceed with my work with bees, for the department editors of Gleanings advocate this, that, and t'other. Each one says he's right and the other fellow wrong—so, who in samhill can I believe? I think twelve beginners should be picked as a jury, with A. I. Root as judge, and a verdict rendered as to who are the sheep and who are the goats among those department editors.'' Gosh, but that tickles me! Hit 'em agen! Let's us beginners and me square off against the old bee highcockalorums every time we get a chance (only I wish to except my friend, J. E. Crane, who once said something good about Man-Around-the-Office).

* * *

I guess the Roots did themselves something that they didn't ''calulate'' on when they took me by the scuff of the neck and kicked me out back here in the advertising columns. They didn't mean me any good, that's sure. But it seems now they have helped themselves as usual by slamming me, for a sure good friend of mine away up in North Yakima, Wash., writes a sympathetic letter taking my side against all the editor crew, and says: ''Gleanings must be trying to help their advertisers, for no sooner had I finished reading your pleasant

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People who deposit money in this bank BY MAIL have the satisfaction of knowing that no matter what conditions may arise, every dollar they entrust to us will be absolutely safe.

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Write for detailed information concerning BANKING BY MAIL.

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ASSETS OVER ONE MILLION DOLLARS

BARNES'
Hand and Foot Power Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

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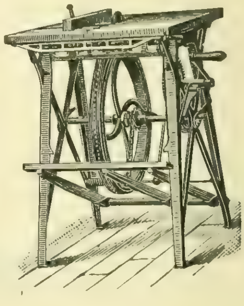
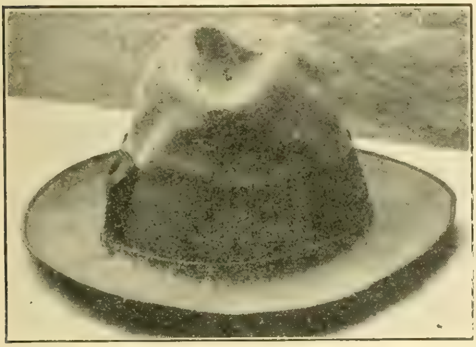


Around the Office—Continued

jests than my eye fell on the Stover Apiaries advertisement; and, feeling rather happy over that one about old Mr. Root 'having his eye on her,' I bought one dozen queens of the Stovers. It is an ill-wind, etc., you know.'' I've nothing against the Stover apiaries yet; but if they don't hold out enough from what they pay the Roots for advertising to give me a commission on those 12 queens, I'll list them right alongside the editorial Roots and begin waitin'.

* * *

The hat, of which a picture is printed in the center of this portentous paragraph, was one worn by Editor E. R. Root during the course of a bee misunderstanding in which he animatedly engaged at about 6 p. m. July 2. The little specks to be seen on the crown of this chapeau are not hayseed nor yet ostrich plumes. They are detached and withered bee-stingers hors de combat. There were 127 of these battle banners, by actual count, sticking in that hat-crown when Mr. Root laid down the red-hot gauge of busy battle and hied himself to his quiet home via a doctor's office. The apiary mistake wasn't his. He went in to save the day—and did it gloriously; but, as they say, ''he got his.'' Oh, he did! he got it the durndest. The only comment I have to make at this time is that I recall this same E. R. Root some years ago giving a lecture and demonstration on the gentleness of bees up in the good old Medina Congregational church—and I believed him then. THEN. And wasn't that a holy place to try to put that stingless stuff across? I wot it so. Poor old Uzzah was called hence indefinitely and hasn't reported since for just thoughtlessly touching the Ark of the Covenant in trying to keep it from tipping over. Supposing he had tried to pull off a ''stingless'' bee demonstration in it—and had got stung ad infinitum while he was propounding the stingless, too! I don't want to make E. R. Root remorseful the rest of his life or his old age unhappy; but I had thought on these things, and don't see why I shouldn't now



Stinger Trimmed.

Queens of MOORE'S STRAIN of Italians

PRODUCE WORKERS

That fill the super quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.
Untested queens, $1.00; six, $5.00; 12, $ 9.00.
Select untested, $1.25; six, $6.00; 12, $11.00
Safe arrival and satisfaction guaranteed.
Circular free.

J. P. MOORE,
Queen-breeder Route 1, MORGAN, KY.

"Best" Hand Lantern

A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

VICTOR and HOME VICTOR

Multiple System
Water Heaters for
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Heats bath and kitchen boiler too. ONE STOVE AND ONE FIRE YEAR ROUND. There is nothing like it. Send for booklet.

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HIVES . FRAMES
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The Tillson Company, Ltd.
Tillsonburg, Ontario, Canada

LEPAGE'S
GLUE HANDY BOTTLES
FOR EMERGENCIES 10¢

Rhode Island Northern-bred Italian
Queens, $1.00. Circular.
O. E. TULIP, ARLINGTON, RHODE ISLAND

QUEENS Select Italians; bees by the pound; nuclei. 1917 prices on request. Write
J. B. Hollopeter . . Rockton, Pennsylvania

Around the Office – Continued

make this surging thought public. He shouldn't do such things in church. If he can and get away with it, then Uzzah wasn't treated square, not by a durned sight he wasn't.

* * *

I don't know whether John C. Finlay, breeder of Italian queen-bees at Kilwinning, Scotland, is any friend of mine or not. Why I am in doubt about it is because he wants me to recommend beer (in a way) to Mr. A. I. Root, after he (Finlay) knows perfectly well what happened to me just for quoting some "language" of a roiled man who hadn't found the crank to the "extracter" these Roots had sent him. I won't take any more chances myself, for I have got house rent to pay. So I am going to let Finlay say it himself, and I don't care much whether the 500 miles of land and 3600 miles of water between him and A. I. Root saves him or not. Here is what Finlay slipped to me, trying to get me to pass it along o. k.'d: "I notice you now wish you 'had'n'adidit' about that fellow and the crank of his extractor. I do not wish Mr. A. I. Root to be 'on you' again, but here is a little tip on uniting which we Scottish beekeepers use—that is, spray the bees to be united with a little beer. It works like magic. The bee is very quiet when intoxicated—unlike human beings. We call this the 'beery method.' Kindly recommend the above to Mr. Root." Say, Finlay, you come over and recommend it yourself. I positively don't, won't, and wouldn't and dasn't. No, nix, not, never and nevermore. Do you, Finlay, understand now?

* * *

My friend, R. A. Alden, of the Seattle "Times," sends me word of how a queen-bee temporarily reduced Uncle Sam's army force out there by one man. It was "this a way:" Avery Smith, a rancher living near Tacoma, Wash., hobbled into the recruiting office of the Eighth Engineer Regiment at Seattle recently all fussed up. When he could get the attention of a lieutenant he said: "I put this here queen-bee in her little wood carrying box, Lieutenant, an' started hoss-back on ol' Baldy acrost the hills f'r the home ranch. Thru the timber, where it was cool, the swarm follered us peaceably enough; but out on the prairie when the sun hit 'em them bees got unpacified sudden, like a boiler bustin' up. They stang me an' they stang each other an' they stang ol' Baldy—which it cost me $3 f'r a long-range telephone call to find out the sheriff had stopped the critter five counties up state. Sheriff said they was a quart of bees still festooned on ol' Baldy, enjoyin' the ride. So, if I could lend my boy Henry back from the army f'r a couple of days he could haul me an' the queen-bee to the ranch in his automobeel which can't get stang, whilst—" About that time the Lieutenant had heard enough.

QUEENS

Quirin's Improved Superior Italian Bees and Queens. They are Northern Bred and Hardy. . 25 Years a Queen-breeder.

PRICES	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested....	1 00	5.00	9.00	.75	4.00	7.00
Tested	1.50	8.00	15.00	1.00	5.00	9.00
Select tested	2.00	10.00	18.00	1.50	8.00	15.00
2-comb nuclei	2.50	14.00	25.00	2.25	12 00	22.00
3-comb nuclei . ..	3.50	20.00	35.00	3.25	18.00	32.00
8-frame colonies ..	6.00	30 00		5.00	25.00	
10-frame colonies .	7.50	38 00		6.50	32.00	
1-2 lb pkg. bees ...	1.50	7.00		1.00	5.00	
1-lb. pkg. bees.....	2.00	10.00		1.50	8.00	

Breeders.—The cream selected from our entire stock of outyards; nothing better. These breeders, $5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames.

Above price on bees by pound, nuclei, and colonies does not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Also nuclei and colonies, if wanted before June 1, add 25 per cent to price in table.

Breeders, select tested and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now.

Reference—any large supply dealer or any bank having Dun's reference book.

H. G. Quirin, Bellevue, Ohio

Queens from Dr. C. C. Miller's Best Breeders

We have made arrangements with Dr. C. C. Miller to keep us supplied with some of his best breeders, and are rearing queens from these superior mothers that we guarantee to be as good as can be reared. These queens are not just individuals that have made a good yield; we all have some colonies that made a good showing, but all do not have a strain that holds the world's record as his does. You are getting at a low price the results of fifty years of careful breeding of one of the most successful beekeepers in the world. Safe arrival and entire satisfaction guaranteed on all goods sold.

One untested Miller queen, $1.00, $11.00 per dozen; 75c each in lots of 25 or more. Tested, $2.00. Ex. Select Tested, $3.50. Breeders, $5.00 to $10.00 each.

A two-frame nucleus and untested queen of this strain shipped on the tenth of May, 1916, built up into a ten-frame colony and stored FOUR SUPERS OF COMB HONEY and the owner says he believed they would have filled another super had he known enough to have given it to them.

In buying queens to fight EUROPEAN FOUL BROOD remember how little it affected DR. MILLER with this same strain.

The Stover Apiaries

Mahew, Miss.

QUEENS OF QUALITY

Capacity of Yard over 1000 Queens a Month

After 20 years of careful selecting and breeding I now have a strain of bees that cannot be excelled by any. . . . My queens are all bred from IMPORTED STOCK, the very best in the world for honey-gathering and gentleness. They are not given to swarming. What more do you want in bees than the three above qualities?

	1	6	12		1	6	12
Untested	$ .50			Tested	$1.25	$ 7.00	$13.00
Select untested . .	.75	$4.25	$8.00	Select tested . .	2.00	11.00	20.00

GUARANTEE.—You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition, to be purely mated, and to give perfect satisfaction. All queens that do not give satisfaction I will replace or return your money. Send for circular.

L. L. Forehand, Ft. Deposit, Alabama

Eastern Beekeepers

This is the time you will need hives, sections, and foundation. Let us mail you our catalog giving prices on everything a beekeeper needs. We furnish full and nucleus colonies, bees by the pound, and queens.

A 3-fr. nucleus colony and Italian queen in a shipping-box, $5.10; tested Italian queens, $1.50; untested, $1.10.

Our location enables us to get goods to you promptly.

I. J. Stringham, 105 Park Pl., N. Y.
Home Apiary: Glen Cove, L. I.

Mott's Northern-bred Italian Queens

are hardy, prolific, gentle, and hustlers, therefore resist well disease.

Untested, 75c each; $8.00 for 12.

Sel. Tested, $1.50 each.

Virgins, 50c each; or three for $1.00.

Bees by pound.

Plans "How to Introduce Queens," and "Increase," 25c. List free.

E. E. MOTT, Glenwood, Mich.

Around the Office—Continued

He dictated right then and there a regimental order ordering Private Henry Smith, in training at American Lake, Wash., to convoy one queen-bee and male escort to the "home ranch." The old man hobbled out of the recruiting office, a smile wreathing his face. Later reports are to the effect that the "automobeel" got Dad Smith to the "home ranch" unstang further, and with the queen in good condition.

* * *

Chalon Fowls, that veteran beekeeper over at Oberlin, O., seems to be a pretty good sort and the possessor of a funny bone, too, for he sends M.-A.-O. this one: "One day an old darkey called on me, and, instead of asking for extracted honey as he had been doing, he requested comb. I remonstrated, saying: 'Why, Uncle Billy, you wont' get nearly as much for your money if you take the comb.' 'Yas,' he replied, 'I know dat, Mister Fowls, an' I laik de abstract myself. But dat boy ob mine, he caint git nuffin else in his fool head. He laikes it in de comb an' he don' laike it in de ABSTRACT.' "

* * *

I saw a fellow mortal of mine once stung to about one and one-half his normal size—not because he hadn't been around an apiary a lot, but just because he had never been allowed any practice till the hour of battle dawned on a tremendous robbing occasion. Then he and the bees both got great practice. The "old man," viewing his son's swollen condition after the battle, drawled out: "I s'posed Charlie had caught on better'n that by jest bein' 'round 'em." But Charlie had "caught on" to nothing except about 453 stings in the robbing

QUEENS

Our July, August, and September SPECIAL PRICE on untested leather-colored and Golden queens---a bargain never offered to the American beekeeper before.

Prices on	1 to	10	queens, 60 cts. each
"	11 to	25	queens, 55 cts. each
"	26 to	100	queens, 50 cts. each
"	100 to	1000	queens, 48 cts. each

Safe delivery. If not satisfied, return queens, and get your money back. The Root Company, The American Bee Journal, Dadant & Sons, any mercantile agency, and others will tell you who we are.

The Penn Company . . Penn, Miss.

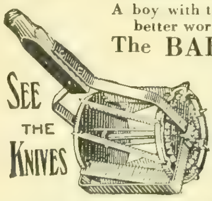
By Return Mail

Choice

Italian Queens

Each . . .	$ .75	Six	$4.25
Twelve . .	8.00	Twenty-five	15.00

J. B. Hollopeter, Rockton, Pa.



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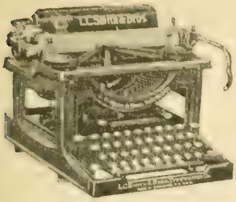
3 tools in 1, cuts the weeds underground and forms the hardest crust into a moisture-retaining mulch — intensive cultivation. Works right up to the plants without injury. Cuts runners. "Best Weed Killer Ever Used." Has leaf guards for larger plants and shovels for deeper cultivation. Self-adjusting, inexpensive. Write for FREE catalog and Factory-to-User offer.

BARKER MFG. CO., Dept. 10, David City, Neb.

fracas, for he hadn't been given a chance. So it turns out that this paragraph is dedicated to the henpeckers, and the henpecked of my country that should be the land of the free, and the home of the brave, husbands. My text, ''Don't do it,'' is found in the first and one thousandth chapter of life and all the chapters in between. The particular chapter I now refer to was written yesterday right where I am now sitting. A whale of a big, florid-faced woman and a little pollywog of a saller man wrote it. She appeared unexpectedly at my door to refresh herself out of the deep springs of my apicultural information, leading this little bit of a man—or, rather, concealing him behind her ample self. She came like a steer thru the corn, head and tail both up. He came pattering. She was some, too, I want to tell you. About 200 pounds, I would guess. He about 108. Her lower jaw was set and firm like the rock of ages—it had had a lot of exercise. His was small and retreating. It had had mightly little exercise. Her eye was filled with the light of battle—his was like a dead chicken's. She was bull-throated. He had a neck like the stem of a wilted Hubbard squash vine. She had a voice like an echo in Mammoth Cave. He had one like a slight draft of wind around a gas jet. She could look you in the eye and challenge you to battle without a spoken word. He couldn't



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$2.50 A Month Buys a Visible Writing L. C. SMITH

Perfect machines only of standard size with keyboard of standard universal construction—every operating convenience—*Five Days Free Trial.* Fully guaranteed. Catalog and special price sent free arrangement—has Backspacer — Tabulator — two-color ribbon—Ball Bearing

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LAUNDRY,
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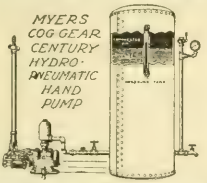
Stop lugging water buckets long enough to sit down and write us about these wonderful labor saving **MYERS PUMPS.**
Information and catalog on request.



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Positively the cheapest and strongest light on earth. Used in every country on the globe Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed Write for catalog. AGENTS WANTED EVERYWHERE.

THE BEST LIGHT CO.
306 E. 5th St., Canton, O.

Queens . . Queens

From a strain of Italians, wintered for thirty years in the foothills of the Adirondack Mountains out of doors. Hardy, gentle, industrious, and fine resisters of disease. $1.00 each, or $9.00 per dozen; also nuclei and full colonies.

Charles Stewart, Box 42, Johnstown, N. Y.

Around the Office—Continued

look you in the eye and he couldn't battle a June zephyr. She wore the real pantaloons, while he stuffed out very slightly an imitation pair. She wore the boots and she was also in the saddle, you bet. All together, he looked like a lost cause or a dog with porcupine quills in his nose—that's an awful subdued look. But to get to it. The Mrs. opened the ball, of course. She nearly filled the office door when she bellowed out: "Is this the place where they answer bee questions?" I assured her that she was almost at the exact center of the universe for information about bees. Reaching behind her, she yanked out her husband, and dragged him to the front. "Now ask him what you wanter know," she commanded of the poor little atrophied remnant of what once had been a man, and he obediently piped up: "We've got two flocks of bees, and they've swarmed. Don't we want a swarm-catcher?" I said no, and told him how to capture the swarms without that expense in so small an apiary. "Ask him some more," she sternly commanded, and gave his sleeve a yank. "Then, say," he efforted again, "perhaps we need a coop and a cooper or two?" Did he mean a hive and super or two? I guess so, but don't know. That poor little man! Held in leading strings! Kept under! Not allowed out—not long enough to get the names of things in his little apiary! O women of America, remember my text: "Don't do it"—don't henpeck 'em. Wear 'em down to an early grave, or end 'm quick with a rolling-pin, but don't keep 'em around after they're really no longer here. They look so—and they don't amount to anything, either.

* * *

The editor-in-chief of "Gleanings" is today (Aug. 13) just back from the East, where he has been attending a series of beekeepers' meetings. He doesn't look as if he got back any too soon. He also looks as if he had been drawn thru a knot hole. Looked at another way, he looks as if he had been thru both the battle of Verdun and Messines Ridge. Well, why? I am guessing this is the whyness of it. You see, at the New York State Association of Beekeepers' Societies' meeting on Aug. 3 he got up and told about 13 and 15 cents being paid for some extracted honey and a dim possibility of even 20 cents being paid some day. Great geewhillikins gee! "Old Selser"

Full Values in

"Falcon" Beekeepers' Supplies

For the last forty years during our manufacture of "FALCON" supplies it has been our endeavor to place upon the market the very best possible line of supplies, and we pride ourselves in having accomplished this. "FALCON" supplies have not only been recognized as the best in this country, but also a leader in other countries. Nothing expresses the superiority of the "FALCON" ware better than the many kind and pleasing words we receive from our satisfied customers, and the ever-increasing demand for "FALCON" supplies.

The season is drawing nearer and beekeepers should endeavor to order early. By making up your wants now you will be better fitted to go into the season with a view of not only obtaining a bigger crop but to facilitate matters thruout the season. If you will make up a list of requirements for quotation we shall be glad to quote.

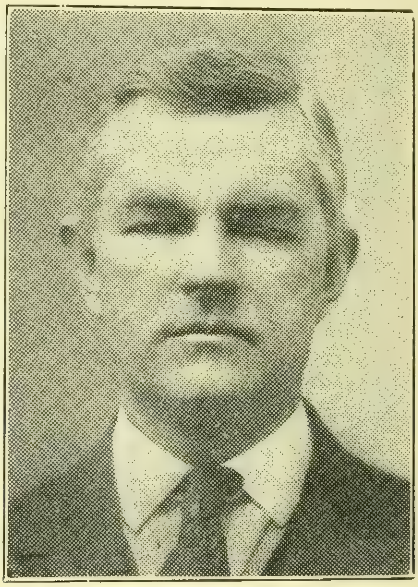
Red Catalog, postpaid. Dealers Everywhere "Simplified Beekeeping," postpaid

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

where the good beehives come from.

Around the Office – Continued

(now that's just what I heard three beekeepers all together unanimously and gladly call him) of Philadelphia was trying to buy honey for the A. I. R. Line people right in that vicinity, and it brought a holler out of him. I guess it did. That Selser brand of holler sounded half like the roar of a lion with its tail pinched (hard) and half like a dead-sure earnest scream for help—sort of a drowning man's holler only worser. It reached Medina by telegraph, but a fellow with good hearin', if he was listenin', could have heard it wireless in San Francisco Bay—it was such a loud holler. Honey had dried up just altogether completely and simultaneously at Selser's price in New York state, after Root's talk. Then when E. R. got to New York city, the honey-brokers had got a report of his speech—and they told him too. They told him a-plenty—mostly that he had better go home and dry up, for he had "spilled the beans" for sure. He didn't get a kind look anywhere—not even from the Air Line direction. Nosiree. He was the real orphan boy. He didn't know what he'd get when he got home, either. "Gleanings" gave him a regular hero-home reception—and he was glad to hear a kind word again. What other sort he has had since he got home, I don't know—and he says he ain't carin'. But this is a fair sort of candid explanation of why he looked so when he put his grip down on the railroad station platform at Medina this morning. (P. S.—This will never get into print if one of the editors sees it in advance. The printing-room foreman says he's with me and they shan't. Dear readers, if you never, never more hear from poor M.-A.-O., goodbye. You'll know why. Others must die—why not I?) (Another P. S.—I positively have nothing agin MR. Selser. My bees didn't produce a pound of surplus, so I hain't got any honey to sell, anyway.)



See to it that every colony goes into winter quarters headed by a YOUNG VIGOROUS ITALIAN QUEEN. Young queens mean perfect wintering, and strong colonies early in the spring, that will produce honey which will be sure to sell at a high price next season. We sell but one grade of queens, *the best we know how to produce.*

Untested: 1 to 4, $1.00 each; 4 to 6, 95c each; 6 to 9, 85c each; 9 to 12, 80c each; 12 to 24, 75c each. Tested: $1.50 each.

Write for booklet. Safe delivery and satisfaction guaranteed. Queens can be shipped up to Nov. 1.

JAY SMITH,

1159 De Wolfe St. Vincennes, Indiana.

CASH paid for butterflies, insects Some $1 to $7 each. Easy work Even two boys earned good money with mother's help and my pictures, descriptions, price list, and simple instructions on painlessly killing, etc. Send 2c stamp at once for prospectus.

SINCLAIR, Box 244, D 62 Los Angeles, Cal.

Queens . Queens . Queens

We are making a specialty of untested queens, and are prepared to send either large or small quantities out promptly, generally by return mail. Every queen guaranteed to be entirely satisfactory. Three-banded or goldens at the same price. We spare neither labor nor money in producing the best queens. Quality counts the most with us.

One queen, 75c; 12, $8.00; 25 to 1000, 60c each

After July 15, one, 55c; 12, 50c; 25, 45c.

The Stover Apiaries, Starkville, Mississippi

After June 20 address will be Mayhew, Miss.

Forehand's Queens . . . Get a good Queen

One that will keep the hive chock full of bees at all times, make the biggest yields of honey, sting less, and look the prettiest, at a medium price.

Over 25 years of select breeding has brought our queens up to a standard surpassed by none, and the superior of many. We have tried the principal races and every method known, and now have selected the best race and method—the THREE-BAND BEES and the DOOLITTLE METHOD. We USE THE 3-BANDS —Why ? Because they get results.

Dr. Miller, Roots, and Dadants use them.

Our queens are sold by many of the largest dealers in the U. S.

Louis H. Scholl (one of the largest beekeepers of the Southwest) says, ''Three-band Italians have proven the best all-around-purpose bee after trying out nearly every race—not only in an experimental way while still at A. M. Col., but in our own apiaries as well.'' (In Beekeeper's Item.)

Untested	One,	$ .50	Six,	$3.00	Twelve,	$ 6.00
Select untested	One,	.75	Six,	4.75	Twelve,	8 00
Tested	One,	1.50	Six,	8.75	Twelve,	17.00

Write for price on larger quantities.

Send for circular giving general description. Mail all orders to

W. J. FOREHAND & SONS, Fort Deposit, Alabama

QUEENS... Select Three-banded Italian or Leather-color. . . .

Queens' wings clipped free of charge.
Safe arrival guaranteed

Untested . .	one,	$ .75	twelve,	$ 8 00
Select untested . .	"	.90	"	9.00
Select tested . .	"	1.50	"	15.00
Extra select breeder	"	5.00		

H. N. Major, South Wales, New York

Increase Your Honey Crop

by introducing some of Leininger's strain of Italian Queens which have a record of 30 years as to honey-gathering qualities and gentleness are unexcelled. Disease has never appeared in our apiaries. Queens will be ready June the first. Untested, each, $1; 6, $5. Tested, each, $1.25; 6, $5.50. Breeders, $5.

FRED LEININGER & SON, Delphos, Ohio

QUALITY BLANKE MARK

BARGAINS IN
BEE SUPPLIES

Some season's left-overs and goods not shown in the regular catalog going at bargain prices. Write for price list.

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The Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

AT BOSTON

New England beekeepers will find everything in the way of supplies they will need the coming season. Place your orders early and avoid the rush. Send for catalog.

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New England Beekeepers

Every Thing in Supplies
New Goods Factory Prices Save Freight

Cull & Williams Co., Providence, R. I.

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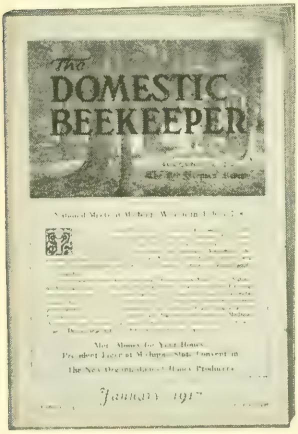
remember we carry a full stock and sell at the lowest catalog price. Two lines of railroad—Maine Central and Grand Trunk. Prompt service and no trucking bills.

THE A. I. ROOT CO., Mechanic Falls, Maine.
J. B. MASON, Manager.

Shipping-cases for Comb Honey

We are prepared to make prompt shipments. We want you on our mailing list. Send for our catalog.

August Lotz Company, Boyd, Wisconsin



The DOMESTIC BEEKEEPER

January 1917

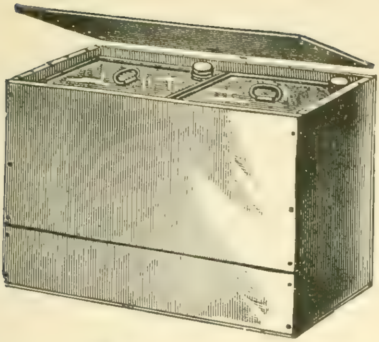
Why You Should Subscribe For
"THE DOMESTIC BEEKEEPER"

The editor being a honey-producer, with no interests in beekeepers' supplies other than to get them to the honey-producer at the lowest possible price, and also being interested in getting a good price for his own crop of honey, would naturally be interested in getting a good price for the crop of others. In other words, *The Domestic Beekeeper* is working all the time for the interest of the honey-producer, helping him to sell his crop to better advantage than heretofore, also helping him to secure his supplies at better rates. All these advantages are set forth in the columns of *The Domestic Beekeeper* from month to month. No live producer can afford to miss the editorials on how to get a better price for his surplus honey. Read how to get 15 cents per pound for extracted, and $2.25 per dozen for comb honey in a wholesale way in each number of the *Domestic*. Also, how to buy your beekeepers' supplies at wholesale.

We haven't room here to tell you of the many advantages you will receive by subscribing for *The Domestic Beekeeper*.

Special offer:—The rest of 1917 and all of 1918 for the regular annual price, $1.00. Send it in today. The quicker you get on our list the more numbers you will receive for the dollar.

The Domestic Beekeeper - - Northstar, Mich.



Get Cans

While You Can

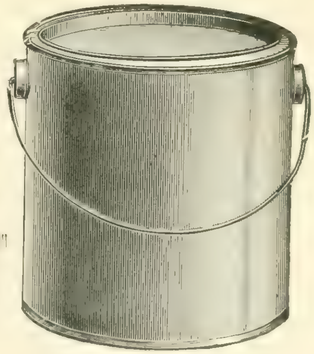
We still have in stock today two carloads of 60-pound tin cans and one carload of friction-top pails, chiefly five and ten pound. We can ship these at once as ordered.

Late prices from several factories are very much higher than the rates we are offering on our stock while it lasts.

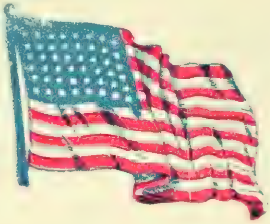
Until further notice we offer the 60-lb. cans at the following prices: Cans only, without boxes, tied nine in a bundle, at $3.60 (weight, 24 lbs.); 50 in a crate, $20.00 (weight, 190 lbs.); two in a box at $1.25, or 10 boxes, $12.00; 50 boxes or more, at $1.15.

We offer five-pound pails, per box of 12, $1.40 per box; $18.00 per crate of 200; per case of 50, $4.75 Ten-pound pails, per box of 6, $1.20 per box; $14.00 per crate of 100; per case of 50, $7.25.

The **A. I. Root Co.**
Medina, Ohio



A WARTIME APPEAL



TO AMERICAN BEEKEEPERS

THE PRESENT CRISIS INTO WHICH OUR COUNTRY HAS BEEN FORCED IS A SUPREME TEST OF THE USEFULNESS OF YOUR INDUSTRY AND IS THE GREATEST OPPORTUNITY BEEKEEPING HAS EVER HAD TO SHOW ITS VALUE TO THE NATION. THE ANNUAL PRODUCTION OF THREE HUNDRED MILLION POUNDS OF HONEY MUST BE INCREASED AT ONCE BY AT LEAST ONE HUNDRED MILLION POUNDS TO FILL THE DEMAND AND TO FIVE TIMES AS MUCH AS SOON AS FACILITIES ARE AVAILABLE.

Every pound of honey produced will release its equivalent of butter or sugar to other purposes of food.

On account of the prospective shortage of sugar a large production of honey is imperative.

Push your production to the utmost, giving preference in times such as this to extracted honey, because in that way the total honey supply may be more greatly increased. Remember that two comb-honey supers may easily be converted into a deep extracting super or a hive body.

Affiliate with your state beekeepers' association and with your local beekeepers' association if you have one. Field meetings should be encouraged early in summer to give practical information on manipulation, etc.

Order your bee supplies early and order standard goods in order to save time and enable manufacturing plants to accomplish the most in the shortest possible time.

Be sure that you are provided with a liberal quantity of containers at the outset in order that the present seeming shortage in tin and glassware may not prevent the sale of your honey when it is ready to market.

Sell all or as much of your honey as possible on your home market. It will bring greater profit to yourself commensurate with the cost of production and retail handling. It will help relieve freight congestion and will offer opportunity for the beekeeper who cannot sell at home to get a living price for his product. At present over ninety per cent of the honey crop is sold on the home market.

If you sell honey at wholesale, do not sell until you have full information concerning the needs of wholesale markets. Such information is furnished by the Office of Markets of the Department of Agriculture at Washington, D. C., to the bee journals and to individual beekeepers. The beekeeper will readily see the folly of dumping his honey without knowledge of the markets, as this demoralizes the market with profit only to the speculator.

REMEMBER, IN HARMONY WITH THE GENERAL CALL MADE BY THE PRESIDENT ALL BEEKEEPERS NOW OWE IT TO THE NATION, IN ORDER THAT BEEKEEPING MAY FULFILL ITS HIGHEST OBLIGATION, TO REDOUBLE THEIR EFFORTS TO INCREASE THE IMPORTANCE OF BEEKEEPING AS AN AGRICULTURAL INDUSTRY WHICH CONSERVES A VALUABLE NATIONAL RESOURCE AND WHICH PRODUCES A NON PERISHABLE, CONCENTRATED, WHOLESOME FOOD WHICH PLAYS A VERY IMPORTANT PART IN THE ENDURANCE OF ANY NATION

(This Page Donated by G. B. Lewis Co.)

Gleanings in Bee Culture

The Bees' Last Chance

Vol. XLV. October, 1917 No. 10

We are always in the market for HONEY and BEESWAX.
Do not sell until you have seen us.
We will pay you SPOT CASH for any thing you sell us.
Get our prices on cans and cases.

Los Angeles Honey Co.

633 Central Bldg., Sixth and Main Sts.
Los Angeles, California
Telephones: Home 10419; Main 5606

READERS, TAKE NOTICE

On and after November 1, 1917, subscription rates for Gleanings in Bee Culture will be changed as follows: :

Two years in advance	$1.75
Three years in advance	2.50
Five years in advance	4.00

The regular yearly subscription will remain as heretofore, $1.00 a year.

The A. I. Root Company, Publishers

Southern Headquarters for Three-banded Italian Queens

To supply the increasing demand for our queens we are now running nearly twice as many mating-boxes as last year, and six times as many as six years ago. We spare neither labor nor money to produce the very best that can be had. We are careful about our breeders for producing our queens and drones. We use the best methods to produce the best queens.

Untested queens	August and later,	$ .55;	12, $ 6.00:	100, $ 48.00
Tested queens	August and later,	1.00;	12, 10.75	
Select tested queens	August and later,	1.65;	12, 18.00;	100, 180.00

Very best queens for breeders, $3.00 each.

If any of our untested queens prove to be mismated we are willing to replace them free of charge. No foul brood has ever been in our vicinity. Safe arrival and satisfaction I guarantee.

W. D. Achord, Fitzpatrick, Alabama

CONTENTS

OCTOBER 1917

Editorial 749-752
To Pack or Not to Pack .... Grace Allen 753
Cellar or Out of Doors .... J. L. Byer 755
Wintering Bees in Texas .... F. B. Paddock 757
Wintering Bees in Iowa .... E. R. Root 759
Wintering in North Carolina .... J. E. Johnson 761
Bee Business in Manitoba 761
Hives Wrapped in Paper and Burlap .... Rev. J. M. Lewis 762
Entrance Protection for Winter Cases .... Dr. C. E. Blanchard 763
Conversations with Doolittle .... G. M. Doolittle 764
Letters from a Beekeeper's Wife .... "Mary" 765
Disappearing Bee Disease .... R. F. Holtermann 766
Honey-dew of Fair Quality .... E. Fleming 767
Wintering in Florida, and Summering in the North .... J. J. Wilder 768
Wintering in South-Central States .... J. M. Buchanan 769
Outwitting the Mice .... Ruth C. Gifford 770
Siftings .... J. E. Crane 771
Stray Straws .... Dr. C. C. Miller 772
Our Food Page .... Stancy Puerden 774
Beekeeping as a Side Line .... Grace Allen 776
Beginners' Lessons .... H. H. Root 778
Gleanings from the North, South, East, and West ..... Dept. Editors 780-785
Our Neighbors' Fields .... E. G. Baldwin 786
Gleaned by Asking .... E. R. Root 787-789
Heads of Grain 791-795
Just News .... The Editors 796
Our Homes, Gardening, Temperance, Health Notes .... A. I. Root 798
Man Around the Office .... M. A. O. adv. pages

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"When we receive your Honey
Return mail brings your Money."

The Fred W. Muth Co.

Get Service Like this Man

Lake City, Mich., May 5, 1917.

Friend Muth:—Your letter with check for $146.20 for wax has been received. Thanks. I do believe you beat them all when it comes to quick returns for goods shipped you. I may have some more wax to sell after we get our cappings melted.

Yours truly,
(Signed) Elmer Hutchinson.

We Want Immediately

Extracted Honey

We buy all grades of Extracted Honey. Large or small lots. Send sample and price. If price is right we will buy. Parties who have Fancy and No. 1 Comb Honey, write us at once. We will buy from 40 to 50 carloads this season.

Beeswax

Send us your beeswax. We pay highest market prices, and send you our check the same day shipment is received.

Old Comb

Make some spare money from the wax rendered from your old comb. We will render it, charging only 5 cents per pound for rendering, and pay you best market prices for the wax rendered.

Shipping-cases for Comb Honey

We are prepared to ship you the same day order is received any number of shipping-cases. Several carloads are here now, ready for buyers. Send your order in now before our supply is exhausted. We sell Lewis Beeware.

Remember We remit the same day your shipment arrives. Read the letter above and be convinced that this is the house to send your shipments to. Try us.

The Fred W. Muth Co.

"The House the Bees Built"

204 Walnut St., Cincinnati, Ohio

In Stock for
Immediate Shipment

800 cases two 5-gallon cans
12000 5-lb. and 10-lb. pails
Shipping-cases for comb honey

Write us

M. H. Hunt & Son, Lansing, Michigan

NOTICE!
Honey . Wanted . Honey

Do not forget, when your crop of honey is ready for sale, to send us a sample. State your price, also how it is put up. We are in the market for unlimited quantities, and will pay cash on arrival. Let us hear from you before selling your crop.

C. H. W. Weber & Co., Cincinnati, O.
2146 Central Avenue

HONEY MARKETS

Conditions in the honey market remain much the same as during the past two months, characterized by uncertainty and influenced by the abnormal war conditions that have unsettled all food prices. Prices for honey at present are abnormally high, and, we believe, will remain high, for the demand seems brisk and very much of the 1917 crop is already sold. The fact that the entire American sugar industry will be placed under government control Oct. 1, and that sugar prices have already materially declined because of this fact, may have a tendency to lower honey prices somewhat. Here is what the United States Monthly Crop Report for Sept. 1 had to say about honey:

> The yield of honey per colony for the United States, which on July 1 was but 13½ pounds, about half the production on that date in the previous two years, had on Sept. 1 increased to an average of 35.9 pounds, almost equal to the 1915 yield tho still decidedly below the yield on that date in 1916.
>
> The wholesale prices of honey on September 1 reported by correspondents average for the United States 13.3 cents per pound for white, 11.6 for amber, and 10.5 for dark extracted; 16.5 for white and 14.0 for amber and dark comb; 15.1 for white and 13.3 for amber and dark chunk or bulk comb honey, the chunk honey being produced and sold for local consumption principally in the South. These figures include some prices quoted for wholesale consignments of less then one ton.

Gleanings within the last month has inquired from reliable and disinterested sources, from widely different points in the country, as to (1) actual prices received for honey (2) and for what prices honey-producers who have not already sold are holding their crop.

From Idaho comes a report furnished by one of the large honey-producers' associations that the lowest price paid for extracted in five-gallon cans, within the association's knowledge, is 12¼c, one car going to Seattle at that price. This association has sold several cars at 12½ and 13c; has put a price of 14c on the balance left and has been offered 13½c for this balance. This association's entire comb-honey crop has been sold at $3.25 for fancy, $3.00 for No. 1, and $2.75 for No. 2—except one car which sold at 25c per case above these prices. This association reports some Idaho producers as selling at $3.00, $2.80, and $2.60 (fancy, No. 1 and No. 2) to coast points and paying 10c per case brokerage. All comb honey sold. Another Idaho producers' association reports the sale of extracted (in 60-lb. cans) at 12c and selling locally at 14c. This association has as yet sold no comb honey, and is holding for $3.75 for fancy, $3.50 for No. 1, and $3.25 for No. 2.

A Colorado honey-producers' association reports selling to jobbers at the following prices: white extracted, per 60-lb. can, $8.64; comb No. 1 white, per case, $4.05; No. 2, per case, $3.60.

The Wisconsin State Beekeepers' Association reports extracted sold at 14c; comb at 16 to 18c.

From officers of the Michigan State Beekeepers' association comes this report: A very few beekeepers have sold their extracted as low as 9c; a few for 10c, but most of the large producers have received from 12 to 15c; the small comb-honey crop has been turned over to the stores at an average price of about 19c, but some who have shipped have received as low as 15c and some as high as 22c. Michigan producers, who have not sold, are reported as holding their extracted for 15c. Most car offers are 12c to 12½ f. o. b. shipping-point.

From New York State's honey-producers' association comes this report: No. 1 fancy comb, $4.25 to $5.00 per case; most of No. 1 has sold for $4.50 per case; white extracted, all not early contracted at 10c net, has sold from 13 to 16c per lb., and the bulk of it moving at 14½ and 15c at producers' points; comb and extracted almost all sold, and buyers snapping up all extracted they can at 15c. The N. Y. State Beekeepers' Association reports white extracted as having been sold at 12½c, and dark honey held at 11c; fancy comb honey being held for $4.50 per case; No. 1 buckwheat comb and No. 2 white held at $3.50 per case.

GENERAL MARKETS

PORTLAND.—Comb honey, fancy, $4.00; No. 1, $3.75; No. 2, $3.50. Extracted honey, white brings 16c; light amber, in cans, 15; amber, in cans, none offered. Beeswax, none offered.
Portland, Ore., Sept. 15. Pacific Honey Co.

KANSAS CITY.—The movement of honey, both extracted and comb, is slow, as the trade complains of the high price. We quote comb honey, fancy, $4.50; No. 1, $4.35; No. 2, $4.15. White extracted honey, per lb., brings 15 cts.; light amber, in cans, 14. Clean, average yellow beeswax brings 40 cts. C. C. Clemons Produce Co.
Kansas City, Sept. 17.

NEW YORK.—There is a good supply of honey in the market; but the foreign buyers are rather scarce at present. There is no decline in prices, as those holding honey expect orders later. New York State producers are holding for 13 to 15 for white; 12 for buckwheat.
New York City, Sept. 20.

BUFFALO.—Very little honey is offering. Some of the largest shippers advise their supply is limited, and less than last year. We quote comb honey, extra fancy, per lb., 22. Extracted honey, white, per lb., 15. Gleason & Lansing.
Buffalo, N. Y., Sept. 18.

ARIZONA.—Demand exceeds supply. Crop well shipped out in car lots. Very few cars left. Prices strong, indicating an advance. We quote extracted honey, white, per case of 120 lbs., $13.00, in car lots; light amber, in cans, $12.60, in car lots; amber, in cans, $12.40, in car lots. Clean, average yellow beeswax brings 30c. Wm. Lossing.
Phoenix, Ariz., Sept. 16.

PHILADELPHIA.—We have considerable inquiry as to probable price on new comb honey, but have had very little to offer. Buyers are reluctant to obligate themselves as to future purchases on the present outlook of prices. On comb honey we have made some jobbing sales at 20 to 22 cts. Can count for extra fancy. Beeswax brings 38 to 40. Chas. Munder.
Philadelphia, Sept. 21.

CLEVELAND.—Old crop of comb honey is all used up. New honey is arriving in small lots. Demand is fair. Comb honey, fancy, brings per case, $5.00; No. 1, $4.75. C. Chandler's Sons.
Cleveland, O., Sept. 19.

SAN FRANCISCO.—Comb honey is coming in; demand only fair; only clean bright stock is active, and selling limited to small quantities. While extracted honey is looked upon as a staple, comb is regarded by many as a luxury. White extracted of quality that will not granulate quickly is moving, and some light ambers sell well; dark honey, especially rank-flavored quality, is moving slowly. Some Hawaiian Island extracted is bringing 8 to 9 cts. per lb. We quote prices to jobbers on comb honey, fancy, per case, $3.25 to $3.50; No. 1, $3.00; No. 2, $2.50 to $2.75. Extracted honey, white, per lb., 12½ to 14; light amber, in cans, 10½ to 12½; amber, in cans, 9 to 10c. Beeswax brings 30 to 31 cts,; darker grades, 25 to 27.

Leutzinger & Lane.
San Francisco, Cal., Sept. 12.

CHICAGO.—During the past 30 days, there has been an active market with light receipts. Fancy comb has reached 22 cts. per lb. No. 1 is selling freely at 20 to 21 with few ambers offered, but bringing from 1 to 3 cts. per lb. less. Extracted clover and basswood blend of good body and flavor brings 15 cts.; amber grades range from 1 to 5 cts. per lb. less according to color, flavor, and body. This applies to honey in tin. In barrels, 1 ct. per lb. less is the prevailing difference. Beeswax is not active, but prices are ranging at from 35 to 38 cts. per lb., according to color and cleanliness.

Chicago, Sept. 18. R. A. Burnett & Co.

ST. LOUIS.—Our market is entirely bare of comb honey, and no new stock has arrived, so it is impossible to make any firm quotations. Southern extracted honey has been arriving quite freely, and the demand for it has been good. Extracted honey, light amber, in cans, brings 15 to 16 cts.; in barrels, 13 to 14; amber, dark, in cans, 12 to 13; in barrels, 11 to 12. Beeswax, 37c.

R. Hartmann Produce Co.
St. Louis, Mo., Sept. 19.

DENVER.—We are at present selling new honey to retailers at the following prices: No. 1 white comb honey, per case of 24 sections, $4.50; No. 2, $4.00. Extracted white, according to quantity, 16 to 18. We are buying beeswax, and at present are paying 34 cts. cash and 36 in trade for clean yellow wax delivered here.

The Colorado Honey Producers' Ass'n.
Denver, Colo., Sept. 15, 1917.

SYRACUSE.—White honey is moving somewhat with the retailer. I don't think that comb honey is going as fast as it did a year ago at this time. I quote comb honey, extra fancy, per case, $4.80; fancy, $4.32; No. 1, $3.60; No. 2, $3.00. Extracted honey, white, per lb., 15; light amber, in cans, 14; amber, in cans, 13. E. B. Ross.

Syracuse, N. Y., Sept. 18.

PITTSBURG.—Demand is poor, but will be better as the weather gets cooler. As yet there has not been much on the market. By the end of the month we look for a good demand. We quote comb honey, extra fancy, per case, $4.00; fancy, $3.50.

Pittsburg, Pa., Sept. 17. W. E. Osborn Co.

TORONTO.—We are quoting new clover honey to the retail trade as follows: 16-oz. glass, $3.25 per doz.; 12-oz. glass, $2.40; 5s tins, 95 cts.: 10s tins, $1.85. Eby-Blain Ltd.

Toronto, Can., Sept. 18.

MONTREAL.—White clover and buckwheat honey is a fair average crop in most sections; somewhat later in delivery this season. Good demand at prices much higher than in 1916. We are paying for comb honey, extra fancy, 16 cts.; fancy, 15; No. 1, 14;. No. 2, 12. Extracted honey, white, 14 to 14½; light amber, in cans, 13½; in barrels, 13; amber, in cans, 13½; in barrels, 13.

Gunn, Langlois & Co., Ltd.
Montreal, Can., Sept. 18.

HAMILTON.—Honey is scarce in this section. We have sold all we received so far, and have only a few more shipments to come. Shippers say they have been too busy to ship. We quote comb honey, fancy, $2.75 per doz. Extracted honey, white, 17 cts. in 60-lb. tins. F. W. Fearman Co.

Hamilton, Ont. Sept. 18.

MEDINA.—We are paying at this date for white, well-ripened, extracted honey in 60-lb. cans, 12 cts. per pound, f. o. b. shipping-point, in carload lots. For comb honey we are paying about $3.25 per case for fancy and No. 1, when shipped in carload lots. Offerings of extracted are liberal, but comb is not offered freely. As to the available supply of comb, there is considerable uncertainty. One of the best authorities on comb honey we know believes that there is a considerable stock being held for higher prices; and, in the opinion of said authority, producers will make a mistake in holding for higher prices on comb. Our opinion is, however, that the market will be governed largely by general business conditions as they may develop within the next 60 or 90 days. The A. I. Root Co.

Medina, O., Sept. 25.

U. S. Government Market Report.

Philadelphia.—Extracted honey: 1 car Colorado, 1 car Arizona, 12 cases unknown origin arrived. Comb honey: no fresh arrivals. Demand slow, market steady; very few sales. Southern extracted in barrels: Amber, 11 to 11½ cts. per pound; Colorado and Arizona: alfalfa and mesquite, no sales reported. Comb honey: few sales old stock; No. 1, heavy white, 22 cts. per section. Beeswax: demand light, market easier; pure crude, 38 cts. per pound.

Denver.—Approximately 2300 cases white comb, and 21,900 pounds light-amber extracted arrived; 24 section cases white comb honey, demand good, market steady; quality and condition generally good; No. 1, $4.05 per case; No. 2, $3.60; white to light amber extracted, movement slow, quality and condition generally good; 14½ to 15 cts. per pound. Beeswax: receipts very light; price to producer 34 cts. per pound.

Cincinnati.—One car Wisconsin comb; 3 barrels and 25 boxes Iowa, 9 barrels Alabama, 11 barrels and 97 crates Kentucky, arrived. Correction; 1790 barrels Ohio last report should have read 1790 pounds. Market strong, demand good, movement moderate. Extracted honey: light amber, 15 cts. per pound; dark amber, 13; orange and white sage, 16½. Comb honey: heavy white, fancy, $4.50; No. 1, $4.25 per 24-section case. No. 1 white heavy comb honey in last report should have read $4.00 to $4.50 instead of $4.40 to $4.50.

New York.—Two cars California, 54 barrels Cuba, and 251 crates Texas arrived. Market fair, demand moderate. Extracted honey: West Indian, $1.25 to $1.40, mostly $1.35 per gallon; California: $1.30 to $1.45 per gallon. Beeswax: 45 bags Cuba and 31 bags Texas arrived; market firm, domestic demand brisk; yellow, 39 to 40 cts. per pound; dark, 38 to 39.

Chicago.—Two cars California arrived; local receipts light; demand active, market very strong. Wisconsin, Minnesota, and Michigan: Comb honey, No. 1, 20 to 21 cts. per pound; fancy, 22. Extracted honey in tins, 14 to 14½ cts. per pound. California: extracted honey, light amber, 13½ to 14.

Minneapolis.—One car Colorado comb, light receipts Minnesota and Iowa; 5 cars Iowa in last report should have read 5 cans. Demand slow, market steady; present supply of all fruits is curtailing demand. Colorado: 24-section cases white comb honey, $4.15 per case. Minnesota and Iowa; 24-section cases comb honey, mostly $4.00 per case. Few sales extracted honey in 10-pound pails, white. Minnesota: mostly 13½ cts.

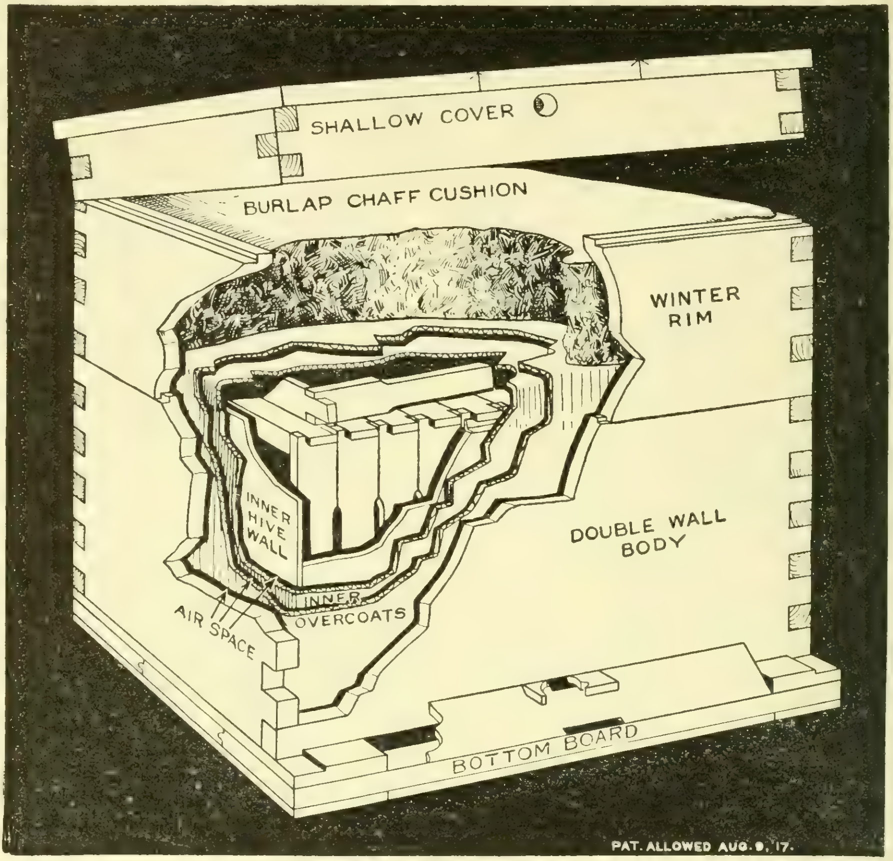
St. Paul.—Light receipts Minnesota and Wisconsin. Market very firm, demand moderate; 24-section cases comb honey. Minnesota: white, mostly 18 to 19 cts. per pound. Extracted honey, very few sales, mostly 14 cts.

Kansas City.—No carlot arrivals; approximately 100 cases by express, and approximately 3000 pounds extracted honey from Colorado; 1 car Colorado due, but late. Demand and movement moderate, market steady; all sales in small lots. Missouri: receipts light. Comb honey: 24-section flat cases, No. 1, mostly $4.75; extracted honey: Colorado, light color, demand and movement slow; mostly 15 cts. per pound. Beeswax: receipts light; demand and movement slow; mostly 40 cts. per pound.

St. Louis.—Supplies light. California bright amber in cans, 12½ to 13 cts.; poorer amber, in barrels, 11½. Beeswax supplies light; 36 to 37 cts. per pound.

Washington, D. C., Sept. 15.

WOODMAN'S New Protection Hive


SHALLOW COVER
BURLAP CHAFF CUSHION
WINTER RIM
INNER HIVE WALL
DOUBLE WALL BODY
AIR SPACE
INNER OVERCOATS
BOTTOM BOARD
PAT. ALLOWED AUG. 9, '17.

The Hive with an inner overcoat. . Wintered 100 per cent perfect in 1916-17. . . Winter Problem Solved.

The same dimensions as formerly. The construction now is such that a bottomless corrugated paper box can be telescoped down over the brood nest, in between the outer and inner hive walls, as a matter of insulation or protection when preparing them for winter. The work of preparing the bees for winter with this system is a joy. In Spring the boxes are removed and stored away in the k. d. flat. A new circular with large illustrations will describe all. Send today for one.

TIN HONEY-PACKAGES

YOU WILL MAKE A MISTAKE if you do ask for our LOW PRICES on Friction Top Pails and Cans. We are SAVING MONEY for carload buyers and others of smaller lots, why not you! Our three-year contract is enabling us to make prices a considerable under general market quotations. Let us hear from you, specifying your wants.

FRICTION-TOP TINS

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	...	12	6
Crates holding	...	...	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

A. G. Woodman Co., Grand Rapids, Michigan

SHIPPING-CASES
PROMPT SHIPMENT

By the time this issue of Gleanings reaches you you will know your requirements for shipping-cases. We have quite a supply of these on hand now and can ship promptly.

Better order at once as freights are slow, and as they are heavy must go by freight. Express would be too expensive. Next month figure out your wants for next year; then send an order for goods on which we will allow an early-order discount. In ordering shipping-cases please remember they have advanced in price 4c each. . . . .

F. A. Salisbury, Syracuse, New York
1631 West Genesee St.

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is at your very door

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Lewis Hives and
Lewis Sections...

Hold to the "Beeware" trademark

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WHERE YOU BUY YOUR
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WATERTOWN WIS. U S A
MAKES THE FINEST.

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California.......... Bishop, W. A. Trickey.
Colorado.......... Denver, Colo. Honey Producers' Ass'n.
Colorado.......... Delta, Delta Co. Fruit Growers' Ass'n.
Colorado.......... Grand Jct., Grand Jct. Fruit Growers' Ass'n.
Colorado.......... Rifle, C. B. Coffin.
Idaho.............. Caldwell, Idaho-Oregon Honey Prod. Ass'n.
Illinois........... Hamilton, Dadant & Sons.
Iowa.............. Davenport, Louis Hanssen's Sons.
Iowa.............. Sioux City, Western Honey Producers' Ass'n.
Iowa.............. Emmetsburg, H. J. Pfiffner.
Michigan......... Grand Rapids, A. G. Woodman Co.
Montana.......... Fromberg, B. F. Smith, Jr.
New York........ Newark, Deroy Taylor Co.
Ohio.............. Cincinnati, Fred W. Muth Co.
Oregon............ Portland, Chas. H. Lilly Co.
Porto Rico........ Ponce, Prats & Vicens.
Tennessee......... Memphis, Otto Schwill & Co.
Texas.............. San Antonio, Texas Honey Producers.
Washington....... Seattle, Chas. H. Lilly Co.
Wyoming.......... Wheatland, Fred M. Harter.

G. B. Lewis Company, Watertown, Wis.

Manufacturers

GLEANINGS IN BEE CULTURE
OCTOBER, 1917

EDITORIAL

WAR MEASURES EFFECT ON HONEY

GOVERNMENT CONTROL of the entire sugar situation now points certainly to the development of new conditions that will vitally affect price, quality, and quantity, from the cane and beet sugar fields to the very door of private homes where the refined product is delivered by the grocer. This situation must and will involve the question of honey markets and honey's uses.

The public press of Sept. 11 announced that the entire American sugar industry will be placed under government control Oct. 1, by the establishing of a license system to include manufacture, refining, importing, and distribution. Food Administration officials will have complete charge of this work. If the Government can bring down the price of wheat and potatoes it can of sugar also.

As indicating what the price effect of the Government's control of sugar is to be, *The Louisiana Planter and Sugar Manufacturer* of Sept. 15 said: "The sugar markets of the whole country have been paralyzed by the announcement that the beet-sugar men were willing to accept 7¼c per pound for the coming crop of white granulated beet sugar and had agreed to that with Mr. Hoover, the consenting parties reaching some 80 per cent of the whole prospective beet-sugar crop."

With the certainty that the sugar business is to be taken in hand by the United States Government, it is altogether probable that the Government will follow the lead of France and England in sugar regulation just as it is doing in almost all other departments of war preparation and regulation. This will mean, first, that the Government will fix the price of sugar. Press notices indicate that the wholesale price will range around 7 cents. Hoover and his assistants will probably allow a reasonable profit, but will stop all exorbitant war profits and speculation.

It will mean, too, that Uncle Sam will limit the amount of sugar available to each consumer. The consumer will have to testify for what purpose the sugar is to be used, and the quantity. It will mean, possibly, that sugar will be barred from going into candy, cakes, ice cream, and soda water. There is a probability that Hoover and his assistants will so regulate the output of sugar that it can be used only to make up a balanced ration which the human system actually requires. The housewife will be admonished, as she already has been, to cut out all frostings from her cakes; to dry fruit, corn, and other food products instead of canning them. Government regulation also will mean that the candy-makers may be compelled to dispense with cane and beet sugar entirely in all candies. If this is the case, honey, the only substitute, will have to be used.

The amount of candy consumed in the United States annually is enormous. If the Government stops the large candy-makers from using cane and beet sugar, the only substitutes will be glucose and honey. Glucose has but very little sweetening power; but it does excellent service, we are told, in making "chewy" candy, such as gumdrops, that have comparatively little sweetening.

Now, then, if the candy-maker desires a candy that has sweetness he will have to use honey, because saccharin, the only other sweetener, a product of coal tar, is a rank poison, and has been barred by the Bureau of Chemistry, Washington, from use in all foods and from all interstate commerce. The pure-food laws of almost all states prohibit the use of saccharin. If honey's strongest competitor, cane and beet sugar, should be commandeered in the United States in the manner stated (and that is precisely what the European Governments have done), the demand for honey will be enormous, because it will have to take the place of cane sugar in all confectionery, frosting, and, very likely, in soda water.

It will have to be used largely in canning. When honey once gets this enlarged foothold, and the public once learns that it can use honey in place of sugar, its future as a food product and as a confection will be established forever.

War, and especially the present one, is an awful thing; but in the wake of war come some good things; and in this particular case it is honey that reaps a benefit, for it is apparent that honey will form a larger part of our dietary than it has ever done before. Even when the great war is over, and a series of years have elapsed and things have resumed their normal condition, honey will not lose its food grip on the public that it secured during this war.

* * *

CELLAR VERSUS OUTDOOR WINTERING

THE QUESTION of packing bees outdoors or putting them inside in a winter repository will depend on climatic conditions. In a general way it may be said that unless the winters are severely and continuously cold, beginning about the first of December and ending in March or April, with a temperature playing around zero or lower, the outdoor method of packing should be employed. It may be said, also, that the average person will winter better outdoors than in.

Indoor wintering is not practical in a climate where the winters are mild, with cold and warm days playing between 10 below zero and 50 to 65 above at times when bees can fly. Besides the question of the outdoor weather is the one of ventilation and temperature in the cellar itself. The mercury should not go higher than 55 degrees nor lower than 40. In climates where the outdoor weather is variable it is impossible to control the temperature in the bee-cellar within the ranges mentioned. A variable temperature in the cellar—one going down below 36 or 37 and above 60—will prove disastrous before spring. Cellared bees, when they become uneasy, either because the temperature is too low or too high, or because the ventilation is insufficient, or because the combination of temperature and ventilation is poor, will be almost sure to have dysentery toward spring. The bees that contract dysentery in a bee-cellar are as good as lost; and even if they live thru the period of confinement they will not be worth much for honey production during the season.

As a general rule, south of the Great Lakes outside packing on summer stands is much more preferable, and even to a considerable extent north of the lakes outdoor wintering can be employed to advantage. In localities like northwestern Iowa, and the Dakotas, where the mercury goes down to zero and stays there thruout the winter, falling sometimes as low as 60 degrees below, with snow on the ground that never melts during the entire winter, the indoor method may be employed to advantage; but even then the beekeeper will have to look after the matter of temperature and ventilation in the cellar.

* * *

WIND-BREAKS VS. PACKING

MORE AND MORE the whole beekeeping fraternity has settled down to the conclusion that windbreaks for bees wintered outdoors are vitally important. No matter how well the bees are packed, if they are out in the open, exposed to strong wind-sweeps, there are quite liable to be some winter losses before spring, especially with these colonies whose entrances happen to face the prevailing winds.

Windbreaks are important south as well as north. If we had to choose between suitable shelter from the prevailing winds or ample packing, we would unhesitatingly select the former. But it is very important to have both in all northern localities, and packing may do a world of good in southern states. It is not alone important to bring colonies thru till spring; but from an economic point of view, as well as for the health of the bees, it is important to keep down the consumption of food to the lowest point possible.

In the southern states, except in some localities, bees can fly almost every day. In some places they can gather considerable pollen, and perhaps a little nectar. All this incites brood-rearing; but brood-rearing may not replace the loss of flying bees that are chilled or worn out and never get back to the hive. Beekeepers in the South might just as well wake up to the fact that their wintering problem, in some respects, is more difficult than in the North. Southern wintering requires more stores, twice over; and even then the chances of starvation will by no means be removed. While a colony may not starve it will not do much brood-rearing unless it has plenty of stores and pollen.

From every point of view, windbreaks and packing are important south as well as north; and the sooner the southern beekeeper gets it out of his head that there is no wintering problem in the South, the better. Even if he does bring his bees thru, the weaklings during the chilly bad weather in early spring in the South will never amount to much. It should be remembered that the South has the problem of springing as well as of wintering bees; and by no means the least is the springing.

* * *

CLOVER PROSPECTS FOR COMING YEAR

RECENT RAINS have given white clover—in fact, all the clovers—a wonderful start forward. On a recent automobile trip to the Ohio field meet which was held at Wilmington, Ohio, we observed that white clover was very promising and abundant thruout the state. Recent reports show a like condition thruout the white-clover belt of the United States. Some beekeepers go so far as to say that white clover has not been so promising before in twenty years.

The late spring and summer rains gave the young seedling clovers a big start; and recent fall rains have given this same clover a big boost. The present high price of honey, and the possibility of what the United States Government may do, and what the European governments have already done, in eliminating the use of cane sugar, makes the prospect of the beekeeper exceedingly bright for the next twelve months. At the present high prices every effort should be made to put bees in good wintering condition. A good colony next spring in May will be worth two or three half-strength colonies that will little more than pull thru the winter.

If we get anything like a good season next summer, there is nothing in all the world that will pay a bigger dividend on the farm or ranch than bees.

* * *

SO-CALLED FOUL-BROOD CURES

THERE ARE TWO or three different foul-brood cures, so-called, that are being sent out broadcast over the country. One of them, at least, recommends removing the infected hive from its stand to another stand, leaving the flying bees to go into hives near their old location. In ten days the hive is moved back to its old stand where the bees go back to the other location into other neighboring hives. Last of all the old combs are melted up. Such a procedure would scatter American foul brood most effectually in the hives where these bees go. In fact, there is no method that will scatter American foul brood more thoroly and more rapidly except the spreading of diseased honey thruout the yard.

Beekeepers would do well to follow only the methods recommended by the Bureau of Entomology, Washington, or those methods authorized by the regular foul-brood inspectors of the various states having foul-brood laws. So far as we know, the methods of cure found in any of the standard text-books are reliable and effectual. Look out for the new cures, the authors of which may be honest enough to think they have something new and effective, but which, nevertheless, are dangerous.

* * *

TWO CANADIAN BULLETINS

TWO BULLETINS of unusual interest have lately been issued by the Canadian Department of Agriculture—the first, Sessional Paper No. 16, being a report from the Bee Division of the Dominion Experimental arm, and the second, Bulletin No. 26, "Bees and How to Keep Them." Both of these were prepared by F. W. L. Sladen, Dominion Apiarist.

The first paper is an interesting summary of experiments at the various experimental stations. Mr. Sladen in the preparation of this was assisted, of course, by the superintendents of the various stations. The report covers experiments in wintering, controlling swarming, etc. In each instance a brief statement is given of the bee pasturage, the production of honey, etc.

Bulletin No. 26, "Bees and How to Keep Them," replaces Bulletin No. 69, "The Honey Bee," now out in print. The present bulletin has been brought up to date and is a very complete work, one of the best bulletins, in fact, that has come to our notice. The illustrations deserve special mention. Plate 1 contains an excellent photographic reproduction of the worker, queen, and drone, as well as a corner of a brood-comb showing capped worker brood, drone brood, and queen-cells. There are splendid pictures also of several of the important honey-plants including alsike clover, white clover, white sweet clover, fireweed or willow herb, and goldenrod.

As stated in the introduction, the purpose of the bulletin is three-fold—to point out the advantages of beekeeping, to give advice to beginners, and to show how profits may be increased by the adoption of modern methods. The advantages of beekeeping are given, and some very good advice as to ways and means of beginning. Quite an extensive description of bees and bee life is given, followed by advice regarding hives and parts, handling bees, etc. The beginner, in fact, is carried right thru the season, most of the work among the bees being illustrated.

On pages 29 to 32 a list of the principal honey-producing plants in Canada is given with their approximate seasons of yield.

Swarming and swarm control come in for their share of the discussion, followed by wax production, different methods of wintering, transferring, uniting, requeening, and feeding.

An up-to-date report is given of bee diseases, symptoms, methods of cure, etc. We note that foul-brood laws have been passed by the following Provincial Legislatures: Ontario, Quebec, British Columbia, Manitoba, New Brunswick.

There are beekeepers' associations in Ontario, Quebec, Manitoba, New Brunswick, Kootenai, and British Columbia, the Ontario Association being the largest, with 1130 members in 1915. The Quebec Province Association held a two-day annual convention at Montreal last November, the proceedings of which were carried on in the French language.

THE TOWN BEEKEEPER AND THE LAW

TO THE MAN located in or near some town, who is starting in the bee business, we desire to call attention to the article "Laws Relating to Bees" in the new A B C and X Y Z of Bee Culture. The new comer in the bee business, located in or near some town, is the person who quite often gets into difficulties with some of his neighbors by reason of his bees. Sometimes the beekeeper is the party to blame, and, again, he is not. In either case it is necessary for him to know his rights in the matter, so that if he is wrong he can put himself right; and if he is right he can't be imposed upon.

The article in question is a digest of the cases that have got into court wherein bees have been the basis of the trouble. In the principal cases the facts are given, and the reasoning of the court, and the decision, based on such facts. In all cases citations are given as to the page and volume where the case is reported.

As stated in the preface of the new A B C and X Y Z, this article is written by a practicing lawyer, now located at Honolulu. He is also a member of the bar of the state of California and of Indiana. And not only is "Laws Relating to Bees" written for the information of beekeepers, but it also contains complete citations to all authorities, so as to be of value to the lawyer who may be called upon to defend a beekeeper in court. There is also considerable material of value to a lawyer, in cases relating to bees, that is not to be found in the law digests and reports; as, for instance, the argument of Judge Williams before the Supreme Court of Arkansas in the Arkadelphia case (this was the case where the court held that bees were not *per se* a nuisance), and the notes on the evidence adduced in the Utter case, in which case it was proven that bees can not injure sound fruit. In fact, the A B C and X Y Z of Bee Culture is the most complete law-book published on matters pertaining to bees and beekeeping.

LET OTHERS DO LIKEWISE

A BEEKEEPER LIVING at Huntington, Ind., has written us that he recently went before the city council to plead for sweet clover on vacant lots within the city limits. He told the councilmen of the high qualities of sweet clover as a honey-producer, for pasture and hay, as an enricher of the soil both as to nitrogen and phosphorus, and asked the officials to spare it during the war and thus help to conserve the food supply. That city council passed a resolution on the spot taking sweet clover from the list of weeds that were to be destroyed as directed by ordinance. So the fine growth of sweet clover in Huntington on vacant lots stands and the bee pasture has been doubled. It would very greatly increase the source of honey production if beekeepers everywhere would go before city, town, and borough councils, county commissioners, township trustees, and road supervisors, and lay the true facts about sweet clover before these bodies. Most of them, when properly informed, would spare sweet clover for the bees.

READERS, TAKE NOTICE

On and after Nov. 1, 1917, subscription rates for Gleanings in Bee Culture will be changed as follows:

Two years in advance,	$1.75
Three years in advance,	$2.50
Five years in advance,	$4.00

The regular yearly subscription rate remains as heretofore, $1.00 a year.

THE A. I. ROOT CO., MEDINA, O.

TO PACK OR NOT TO PACK

Interviews with Many of the Southern Beekeepers on this Question that is so Important at the Present Time

By Grace Allen

TO pack or not to pack — that is the question. Whether 'tis better—but, no; I refrain. But I do want to plunge right into this wintering question. There have been a number of interesting and courteous replies to my request, page 624, August, for experiences or opinions. They have come from honey-producers and queen-breeders in different southern states, and I shall just quote extracts from most of them, so letting them speak for themselves.

From North Carolina comes testimony to the value of packing. Mr. L. Parker, of Benson, North Carolina, writes: " Tho I have never experimented with winter packing very much, yet I have to some extent. What I have tried has been perfectly satisfactory, bees usually coming out from 19 to 50 per cent stronger than the ones that were not packed. I think it well pays to use winter packing."

Mr. F. L. Johnson, Mount Airy, North Carolina, whose father has an article on this subject in this number of GLEANINGS, page 761, writes: " There is no doubt but that winter packing will pay every beekeeper in this section. I have not tried the packing very much, but have seen enough of the results to know that it will pay for the extra cost and time."

And Mr. H. B. Murray, of Liberty, North Carolina, offers the following: " We have packed our bees in the past, some, and think it *pays* very *much*. We use different methods—board coverings, pine straw around hive and on top, fastened with wire or strings, body shaped like hive-body, with felt or rubber covering, which is a real ideal way—a little expensive. I suppose that, for a man with three or four hundred colonies to start, the pine-straw plan would be best. We control several hundred colonies, and use the above methods as most convenient to our yards."

On the other hand D. T. Gaster, Randleman, North Carolina, says: " Some years ago I packed my bees in the fall with wheat chaff for two or three winters. Then my apiary got so large I left some unpacked, and I could not see that the packed ones came out enough ahead to pay me to pack them. So I quit. The main thing is to have plenty of bees and plenty of stores, and they will come out O. K. here where we don't often have over ten days at one time but that bees can take a flight. As for myself, being a queen-breeder and taking out queens and changing things around so much, I try to winter some very weak, and lose some one way and another."

Mr. Bruce Anderson, of Winston-Salem, North Carolina, who sent in a partial report of his experiments last month, has recently very kindly loaned me his note-book, filled with all sorts of interesting data as to work done in yard, weather conditions, opening and failing of different flora, and so on. From this little book I figure that his average honey production this season from hives in winter cases was 37½ pounds, while that from hives not in cases, tho with supers of leaves and wrapped in paper, was 36 pounds.

Mr. G. H. Merrill, writing from Pickens, South Carolina, says: " Last winter was the first experience I have had in packing. The colonies that were not packed wintered just as well. But I am planning to pack some this fall, as I have a yard that has no protection from the north winds."

From Cordele, Georgia, comes an interesting letter from Mr. J. J. Wilder, the well-known successful honey-producer whose fifty or more yards count up into thousands of colonies. Either winter packing is profitable thruout this entire country, or there is a line dividing the section where it is profitable from the section where it is not. Evidently Mr. Wilder assumes this line is north of his part of Georgia, for he says he is too far south to be able really to help out in this discussion—a remark somewhat impressive of itself. But, continuing, he tells of two apiaries up in the Blue Ridge where he spends his summers—tho not his winters.

" It is about as cold there as anywhere in the South," he writes. " Winter before last some of those colonies were lost. It was a very mild winter too. Last winter was a severe one and no colonies were lost, and they made a great crop of honey this year. So severe cold was not the cause of the loss. Then, too, the past spring was cold there; trees with full-grown leaves were frozen, and the forest hangs with dead leaves even yet as a result. Yet the bees have made good, and I never saw the like of beautiful white honey during the seven years I have been going up there.

" So I could not and would not advocate winter protection, further than plenty of good winter stores and strong colonies. I can't winter a weak colony even in South Florida. So uniting is necessary in case of weak colonies, and we do considerable of this. Winter protection is no problem in the South; and as we have so many we should not dig up more, is my honest belief. A good cover extending six inches out over the hive all around, placed on the regular cover, and well weighted down, so as to ward off dampness, is all that is necessary, saying the least of it. More should be said about preparing the bees properly. If this is done, all is well."

The three following notes from Alabama suggest similar views. Mr. W. D. Achord, of Fitzpatrick, Alabama, says: "We have never thought it worth the trouble and expense to pack our bees for winter, and do not protect them in any way., I presume they do use more honey when not protected here, but do not think I could gain anything in any other way by protecting them."

"I have never packed any hives for winter," writes Mr. J. A. Jones, of Greenville, Alabama. "I don't think it is necessary in this state. My bees winter all right in a single wall with plenty of stores."

Mr. T. J. Talley, also of Greenville, writes: "My way of preparing bees for winter is to put in young queens in October or November, and plenty of stores. I hardly ever lose any. I don't pack my hives in anything."

From Mr. Porter C. Ward, of Allensville, Kentucky, comes a very interesting letter. Mr. Ward is a very busy farmer-beekeeper, successfully operating a good-sized farm and 150 colonies of bees. He writes, in part: "I winter in the ordinary hive, ten frames, giving no protection of any kind—don't even contract the entrances, unless I happen to know of a weak colony. As a rule tanglefoot gives us a good surplus in September. This is taken off in October; and as I take if off I try to notice that each colony has stores enough for winter. After this is done, I pay very little attention to them until spring. Carelessness and press of other business causes my losses to be much heavier than they would be had I the time to give them the attention they ought to have. With close attention there is practically no need of any loss at all. As it is, my wintering losses will probably average 5 per cent. The loss could be reduced to 1 per cent or nothing, had I the time to see that every colony had stores enough and that none were queenless. These two things cause practically all the loss.

I have never tried packing, and don't know of any one who has. I have so little faith in it that I am not going to try it. I can't see that the extra labor and expense would be worth while, since I already have strong colonies by the time I need them. And then I am sure it would not reduce my winter losses any."

Getting into Tennessee, the following comes from Mr. Curd Walker, queen-breeder, of Jellico: "My average loss is less than 2 per cent, and has been for a period of ten years. I have wintered in different ways, but here is my best way—in the Root Buckeye double-walled hive. I also get good results from the ten-frame hive, using two bodies and an extra super on top with chaff filling, with the metal cover, and protected from the cold winds with breaks. About all the difference I can get from packed hives is more early brood, which means a lot in the black-locust and poplar flows. I am aiming to try some of Dr. Phillips' winter cases this winter, as I am always trying to improve."

Mr. J. M. Buchanan, Franklin, Tennessee, says: "I think bees will come out of packed hives in better condition than when not packed, but whether the difference will justify the expense and labor is still an open question. Personally I doubt it."

Of particular interest is the following letter from our state inspector of apiaries, Dr. J. S. Ward: "Out of forty colonies last winter I lost only two—both of them queenless. My bees were wintered in two-story standard ten-frame hives with contracted entrances. Each colony was given from eight to ten frames of sealed stores, and the results were very gratifying. Each colony came out strong and vigorous in the spring. I plan to experiment with sixteen hives in packed cases this winter. I am persuaded that winter packing will be very helpful, even in the South, but I am not persuaded that the gain will justify the cost. In my work over the state I do not find heavy losses in the apiaries of progressive beekeepers. The winter losses, as reported, occur in yards of the careless untrained beekeepers. Where box hives, old gums, and cracker-boxes are used, and no attention given to winter stores, the winter losses will always be heavy. Education in the use of standard equipment will cut down the losses and give gratifying returns in the honey harvest."

Now, making allowances for a few apparent misapprehensions as to what winter packing aims at, the majority of these expressions seem to summarize about like this: If anybody tells us, as they have told us in the past, that winter packing is necessary in the South because our winter losses are so startling, we remain unconvinced. Those of us who are present at the conventions where these things are discussed, or read the journals in which they are treated, do not have these startling losses. The education of uninformed beekeepers is another problem—a serious problem, too, and a pressing one, but quite different from the one we are discussing. This one resolves itself into the simple question whether or not the profits of progressive, successful beekeepers will be increased by winter-packing their bees. Some southern beemen think it will, especially in North Carolina. More think it will not, especially in Georgia and Alabama. The rest of us are going to find out for ourselves. But remember, please, everybody, we are doing this, not to lessen that dreadful 50 per cent loss that we don't have, but to see if perchance our colonies may consume less stores, or come out a little stronger in the spring, and so be better prepared for the honey-flow. And we do hope they will. We expect, or hope, the packed bees will be not only better, but enough better to make the labor and expense pay—to produce a gain, as Dr. Ward says, that will justify the cost.

It may turn out to be a big thing for us, this winter packing in Dixie. I wish every beekeeper progressive enough to read Gleanings would try it this fall. Pack them four hives in a case, or two, or singly, but, as Mr. Hawkins said to me, "do be sure to use *enough* packing—not less than six inches on six sides." Let's do it early, too—better not at all than too late. We can get our plans all made this month, and material assembled; then when the first touch of frost comes, we shall be ready. They should all be packed by the end of October or by early November.

But first let us be sure that there are good queens in every hive, plenty of young bees, and thirty pounds or more of stores.

Nashville, Tenn.

CELLAR OR OUT OF DOORS

It Makes Very Little Difference Provided there is an Abundance of good Stores in the Combs

By J. L. Byer

OUTDOOR wintering versus cellar wintering; large hives versus small hives—these and other debatable subjects in connection with beekeeping are generally live items for discussion among beginners and younger members of the craft. On the contrary, experience generally mellows one's opinions, and, as a rule, there is less prejudice and more or less uncertainty voiced by older members of the profession when their opinions are asked for on these said debatable questions. To illustrate: While not counting myself "old" by any means, yet I well remember my former attitude on the hive question—an attitude, by the way, that just now causes me to *smile.* I was brought up among surroundings where nothing but very large hives were to be considered. My grandfather used a hive, and I still have many like them in use, that had a brood-nest equal to about 18 L. frames. Actually I almost *pitied* the poor unfortunate who was so misguided as to use so small a hive as the eight-frame L. hive. Well do I remember listening with rapt attention to a debate on the hive question at the Detroit convention, the large hive ably championed by our friend Holtermann, while the small hive was upheld by a Michigan beekeeper—Mr. Chapman, if I remember correctly. Frankly, while much interested at that time, today I would not go across the street to listen to a debate of that kind. Why? Simply because fate ruled that a large apiary in eight-frame L. hives was to come into my possession; also another apiary with hives about midway between the eight-frame L. and the extra-large hive mentioned. Not being in position to change these hives into uniform equipment we have run them as they were for a few years. What has been the result? In the past season, which was a fair test, as conditions were about the same at all yards, I find that our average per colony among the different apiaries did not vary five pounds per colony, no matter if one apiary was in eight-frame L. hives and another in hives more than twice as big. No, it is not a question of size of hive, but of adapting *radically different management to radically different hives.* No, this does not signify that a beekeeper cannot lawfully have a hive preference; but the point I wish to make is that the hive alone is not necessarily responsible for any increased yield over some other style of hive.

These thoughts were forced on my mind by reading Mr. Doolittle's article on page 1066, Oct. 15th issue, last year; and, candidly, I am afraid that I shall have to except Mr. Doolittle from the claim that age mellows our views, for surely he is *prejudiced* in favor of cellar wintering. His experience and conclusions on some points are so at variance with the common practice of hundreds of beekeepers living further north than he does that I feel like making some remarks on the subject, even if I run the risk of being called presumptuous.

He says that in outdoor wintering he had a loss "several years that went above 75 to 80 per cent of the colonies left out." Surely for his latitude there was something radically wrong, either in strain of bees, method of packing, quality of stores, or some other factor. Why, I can take him to a chain of apiaries (not our own) where the bees have been wintered outdoors for many years, and the loss for five consecutive years will not average 5 per cent. This is exceptional, I will admit; but where to look among professional beekeepers to find losses of 75 to 80 per cent in any one year would be a problem. One hundred miles north of Toronto, and just two miles from an arm of the Georgian Bay, we have an apiary of over 200 colonies. In this locality it is not so very uncommon for the thermometer to register 40 below zero. We make no claim for the future, but simply give results in wintering for the four years they have been wintered there. We have had losses from queenless colonies, and in the four years three or four colonies have been smothered by hive-entrances becoming clogged. Last winter two colonies starved. Aside from these losses not a single normal colony has died in the four seasons. At present 280 colonies are in that yard; and when it is considered that we sometimes do not see the apiary from late in October till the following April, can it be wondered at if we begin to inquire the why and wherefore of 75 to 80 per cent losses for a number of years?

So much for winter losses, and now a word or two about the amount of winter stores consumed. Frankly, I know little about cellar wintering. For six years, here in York Co. I wintered about 40 colonies in the cellar with varying results. Only one year did the cellar-wintered bees outstrip the others during the honey harvest. During the winters of 1911-'12 and 1912-'13, over 200 colonies were wintered in caves out in Leeds Co. These caves were about as near perfect as any repository could be, and the bees all came out alive each year. But they were behind the outdoor bees each year for all that.

Mr. Doolittle gives the weights of the two lots tested, figuring from Nov. 20 and April 19, and found that the cellar-wintered bees had an advantage over the outdoor bees to the extent of over 11 pounds to the colony saved in stores. I do not doubt it a bit, provided the bees had a good cellar to winter in. But it would have been a fairer test to weigh those two lots of bees on May 19, and then I venture to say the difference would not have been so pronounced in favor of the cellared bees. In fact, if there had been an early willow flow in the interval, the chances are that the difference would have been in the other direction. At least that is what would likely happen here in "our locality."

Always, in placing cellar-wintered colonies alongside of well-wintered stocks outside, in the early spring more stores would be present in the former than in the latter. A month later the reverse was always the case, the explanation being that the outdoor colonies had used up more of their stores earlier in brood-rearing.

As on the hive question, I am not prejudiced on this problem of wintering, for I certainly know that the majority of our producers in Eastern Ontario still winter in the cellar. On the other hand, I do not for a moment think there is the extreme difference in favor of one system over another, as Mr. Doolittle's article would lead one to believe. While I write, I can think of quite a large number of extensive beekeepers in Ontario who formerly wintered in the cellar exclusively, and today are outdoor winterers with no thought of changing their system. While there may be some who have changed from outdoor to cellar wintering, I cannot recall any. Is it conceivable that these men who make their living out of bees—in fact, keep bees for that purpose—would follow any system showing such a decided disadvantage when compared with another way? The question is easily answered, and needs no further argument. I have made no exception to Mr. Doolittle's locality as compared with our location, as he lives considerably south of us and should at least have a climate no colder than ours. From correspondence in the neighborhood of Syracuse, I know that they often have days warm enough for bees to have a flight when such is not the case with us. Mr. House, near that place, has an ideal wintering repository, and yet I remember when visiting him a year ago last December the repository was not nearly full of bees, while within a few yards of the building, somewhere between one and two hundred colonies were wintering outside. Mr. House is a business man; and I am convinced that, if he expected any huge losses, he would have soon carried the whole outfit inside.

In conclusion, let me say that what I am saying is mostly for beginners. Do not expect that any particular style of hive will make a difference between success and failure; and if you live in central or western Ontario, or in other sections in the same latitude, or further south, do not bank on any particular system of wintering as being the *only* thing. Bees can be and are being wintered successfully both inside and outdoors. Try the two methods if you wish, and so decide for yourself. At the same time you are pretty sure to be on the right track if you follow the methods of any successful beekeeper whom you may happen to have near you. No matter how you winter, first-class preparation in the fall in the way of providing abundance of good stores is the main consideration. Thus prepared, it is wonderful what amount of other unfavorable circumstances bees will successfully weather and still show up ready for business in the spring.

Markham, Ont.

WINTERING BEES IN TEXAS

Cold Winds Rather than the Low Temperature Necessitate the Extra Packing Thru the Winter

By F. B. Paddock

IT has been said, upon good authority, that the wintering problem is the most serious of all for the beekeepers of the northern states. The beekeepers of the southern states have, in the past, considered the wintering of bees a problem which did not concern them. It has been the attitude of most of the beekeepers of this state that the bees could be almost disregarded from the end of one honey-flow until the beginning of the next. It is possible now to see a movement, on the part of the more progressive beekeepers, to look into the matter of wintering bees. After the spring of 1917 it was possible to get into a discussion with almost any beekeeper on the topic of wintering bees. It is conceded now by a great number of the better beekeepers that in Texas it is necessary to look carefully into the matter of wintering—that it is really a problem. By this it is not meant that it is about to be advocated that the beekeepers of Texas will have to employ cellars or heavy packing-cases to carry their bees thru the winter successfully. There are many other factors which contribute to the great winter losses suffered in this state.

Of course it is understood that conditions in the different beekeeping sections of this state vary as much as between widely separated northern states, and for that reason it is possible to suggest only general principles that are to be carefully worked out for the various sections. To enter into a discussion of the details of wintering in each section cannot be included at this time.

The time from the last fall honey-flow to going into winter varies greatly in the different sections from two or three weeks to as much as four or six weeks. Of course, during this time the bees are quite active and are consuming their stores rapidly. It very often happens that the colonies will have a brood-chamber full of stores at the end of the honey-flow, and if inspected the beekeeper will consider them in good shape to go thru the winter without further attention. However, the bees should be inspected as late as possible before the winter weather sets in; and if they are short on stores more should be given them.

The best feed to give such colonies is sealed honey in brood-frames. It is advisable to have some surplus honey stored in brood-frames for this purpose. It is seldom advisable to take frames of sealed honey from those colonies that are apparently extra well supplied at the beginning of winter. The chances are that they will need it before the honey-flow of the following spring if they are to be in prime condition at that time.

We are now at an oft discussed question of whether an eight or ten frame hive winters better. The ten-frame hive allows more space for stores; but, on the other hand, they require more heat to keep them warm, which means that more stores are consumed. It is very doubtful if this is of sufficient importance either way to be the deciding factor in successful wintering. The same may be said of the practice of having extra stores on the hive in a super. This means additional space to keep warm during the winter. It often happens in this state that some beekeepers will place as many as four supers on a hive to protect the extracting-combs from the attacks of the wax-worm. This is certainly not a safe practice except in the extreme southern sections of the state, and then its wisdom is doubted. It is good to see the fast-growing practice of not robbing the bees as closely as in years past. Even with honey selling at three times what it did three years ago, the better beekeepers are inclined now to leave more honey with the colony, never taking any from the brood-chamber, and many leaving a full extracting-super of sealed honey for each colony.

Without doubt, the best feed for bees to carry them thru the winter is a good grade of sealed honey. It may not always be possible to do this, and the next best material is extracted honey. Only when absolutely necessary should sugar syrup be fed for wintering purposes.

As a rule, a majority of the beekeepers of this state never think of the importance of a good queen in successful wintering. Too often a queen, once in a colony, is not disturbed, and her successor is never thought of until she dies. If a queen fails during the fall flow the chances are much against the colony wintering successfully.

To protect the bees from low temperatures is not as important in this state as the protection from the prevailing cold winds during the winter. The direction of these cold winds varies with the locality—north in one place, southeast in another. Seldom do beekeepers take this into consideration, but leave the bees with the entrance full width, to stand the chilling wind. It is human experience that a low temperature can be withstood much easier than can a cold wind. When considering the winds it is also necessary to take into account the fact that hives standing close to the ground are less affected than are those on high stands. Rarely are high stands used in this state in the large honey-producing yards. They are usually found in the backyard apiary.

The windbreak in Texas is most valuable, not as a winter protection, but in retarding early spring activity, which is so disastrous. In practically every beekeeping section in this state there is a long cold spring, during which time the bees should be kept inactive if possible. One beekeeper had two yards, located respectively on the south and on the north sides of a small wood lot. The bees on the south side got the full effect of the early spring sun, and were tempted to fly, only to get caught by a cold wind. These colonies were rapidly depleted and could not gather the spring flow of honey. Those bees on the north side were kept inactive until after the period of the cold winds, and consequently were strong enough to handle an early spring flow of honey. In the early spring it gets cold long before dark, and many bees are caught out searching for food and water. Such bees are, of course, lost to the colony. Many advocate a close watering-place at this time of the year, even if supplied artificially. This so-called spring dwindling is now recognized as the serious handicap in this state, and by many is not considered a part of the wintering problem. But it really is, for wintering means the getting of the colony from the fall flow to the spring flow.

The bees should be examined as early in the spring as possible to determine the condition and the amount of stores. The stores should always be plentiful. If they are not, spring feeding is necessary. This, however, must be carefully done or it will induce brood-rearing too early, which only means an unnecessary consumption of stores. Knowing the usual time of the first spring honey-flow in the locality, the beekeeper should make every effort to have his colonies up to full strength by that time, but not before it. Frequent examinations of the colonies are necessary during the spring, and more manipulations are required than at any other season of the year.

Let every beekeeper in Texas realize the necessity of successful wintering of his bees and bend every effort to that end.

College Station, Tex.

[Some beekeepers living in the southern part of the country where the need of extra protection thru the winter is the exception rather than the rule, have seriously wondered whether it is not really cheaper in the end to run the risk and eliminate all expense of packing for the one year in five, say, when it would be a decided advantage. But windbreaks and shelters from prevailing cold winds are needed every year, in the fall and spring as well as in the cold weather. In fact, a sheltered locality is a great advantage for any apiary. It pays to select a spot, whenever possible, where buildings, trees, shrubbery, or high fences break the coldest winds. Mr. R. F. Holtermann even goes so far as to insist on a tight fence on all sides of each of his apiaries.—Ed.]

WINTERING IN WESTERN IOWA

How Beekeepers in the Vicinity of Sioux City are Wintering in Caves or Dugouts with Almost no Loss

By E. R. Root

In our issue for July, I described beekeeping conditions in and about Sioux City, Iowa, particularly with reference to the growth of sweet clover. In the present article I desire to refer particularly to the dugouts or caves that are used for wintering bees in this locality.

The soil in this part of the country is very deep and firm. One can dig down ten, twenty, or thirty feet almost anywhere and the banks will remain intact year in and year out—that is to say, one can dig a trench or a bee-cellar almost anywhere in this soil, making the sides straight and perpendicular without the necessity of putting in a retaining wall to support the clay. This peculiarity of soil conditions in this locality enables one to build bee-cellars for a very moderate sum.

Mr. E. G. Brown, of the Western Honey Producers, uses a number of these cellars, and he estimates his cost of bee-cellars, 12 x 16 x 6 feet high, inside in the clear, is only about $25.00. This includes all material and labor. At this figure he can not, he says, afford to use outside winter cases, and it is doubtful whether anything in the form of outside protection would stand the extreme drop in temperature that is experienced in this locality, where the mercury goes down to 40 or 50 degrees below zero, and remains so for days at a time.

Mr. Brown has been using these dug-out cellars with clay bottom and clay walls for a number of years, and the loss has been confined down to around 1 per cent, not exceeding 2 per cent at most. In Figs. 1 and 2 are two of his cellars, one at the Glen yard and the other at the Belfrage yard. Both of these cellars are 12 x 16 x 6 feet inside measurement.

Mr. Brown digs a square hole 12 x 16, 4 feet deep. In each of the corners he sets a post that projects above the surface of the ground about 2½ feet more. Boards are nailed on the outside of the posts, leaving a tight board fence from 2 to 2½ feet deep around the square hole, to catch the dirt as it is thrown out and to avoid rehandling the dirt. He proceeds to build the cellars as follows: With a post-hole digger he puts down four holes into the ground 12 feet apart at the sides, and 6 feet apart on each end. Four fence-posts are put into these holes that are just deep enough to leave the posts projecting above the surface of the ground 2½ feet, as already mentioned. Rough boards are then nailed around the outside of the posts, leaving a solid fence 2 to 2½ feet high. After this, with a pickax and a spade he digs out the ground to a depth of three or four feet, depending somewhat upon the kind of drainage that he has, and general soil con-

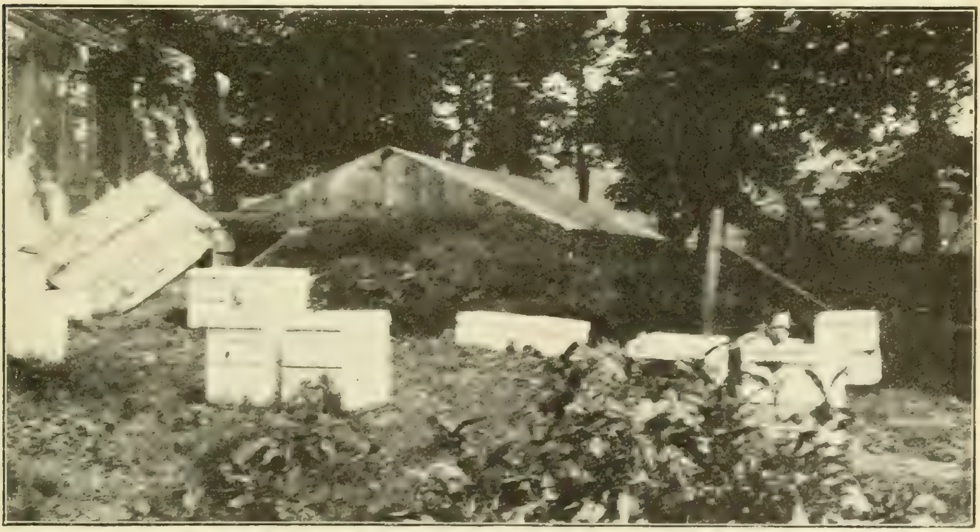


Fig. 1. Brown's dugout winter repository without retaining walls, at a net cost of $25.00.

ditions. The dirt as it is dug out is then thrown outside of the wooden enclosure, leaving a nice embankment on all four sides. This saves rehandling the dirt.

A wooden ceiling is then placed over the top of the hole, and over this a gable roof. Between the gable and the cellar ceiling proper is placed a quantity of packing material such as straw or hay. A cellarway is provided at one end with dirt steps, because the dirt is very solid and firm. When the cellar is properly roofed it is complete and will hold 200 colonies.

A ventilator is provided, reaching thru the ceiling to within six or eight inches of the bottom of the cellar. This passes up thru the packing material, up into the under side of the gable, but not thru the roof. The ends of the gable are nailed up with loose boards, leaving a little space between so that air can pass back and forth. In this way no direct current of air passes down into the cellar, and yet there is perfect ventilation. While such ventilation would be sufficient in climates as cold as this, it would hardly be enough in milder climates.

In Mr. Brown's home cellar he uses a larger dugout and a scheme of ventilation somewhat similar, only the air-pipe goes up into the room above where the atmosphere is changed gradually.

From a general survey of conditions and examination of soil it is very apparent that the most economical and satisfactory way of wintering in this locality is in the dugouts or cellars just described; and the fact that such perfect results have been secured, and the further fact that outdoor-wintered bees, even when they are packed, do not winter very well, would seem to argue pretty strongly for the dugouts.

In an ordinary locality it would doubtless be necessary to put in a retaining wall, down about the depth that is dug into the ground. It would also be necessary to have proper drainage.

Some other beekeepers in the locality dig cellars into a side hill. This has a little advantage, perhaps, in the fact that there is perfect protection overhead and all around.

In Fig. 2, the Belfrage yard, the building shown is made up of galvanized iron. It is very cheap, and answers perfectly as an extracting-house.

Perhaps the statement of "very cheap," so far as it relates to galvanized iron buildings, will need considerable qualification for present conditions. During the last three years this metal has advanced three times its former cost; and at the present time it would be cheaper to use cheap lumber—the very cheapest and poorest that there is on the market, and cover it with roofing-paper. We have been using Neponsett roofing-paper on some of our buildings, then gave them a coat or two of paint, and so far this covering, after ten years of use, is in excellent condition. With an occasional coat of paint there is no reason why it should not last indefinitely. On account of the high cost of sheet metal, roofing-paper will have to be substituted for hive-covers as well as for houses. A three to four ply of asbestos can be used without paint. While it will cost more it will never rot nor require paint.

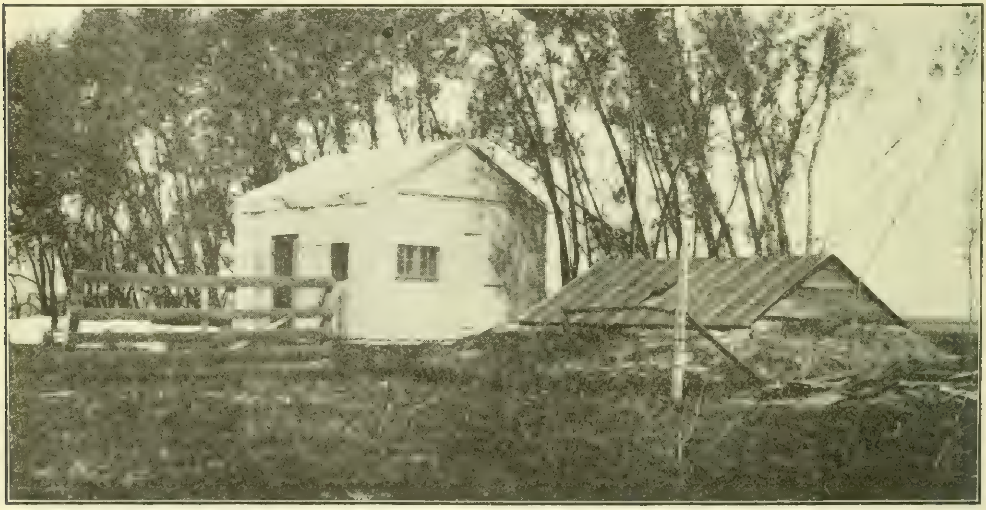


Fig. 2.—Western Iowa dugout bee-cellar. Galvanized iron extracting-house in background.

FROM THE FIELD OF EXPERIENCE

Wintering Problem in North Carolina

Ten years' experience with bees, starting with 25 colonies and increasing to 100, and then after a few years' work with this last number an increase to 500, gives us some experience in the business along many lines. We have been interested in the wintering problem all along, and have tried several plans in a small way. For several winters we removed four combs from the brood-nest and put in division-boards and packed the empty space on the sides with chaff. We have packed them by putting a super over the colony and filling the super with chaff, of course having a cloth over the bottom of the super. We have wrapped the colonies in tar paper. But in all these experiments we have never been able to see just whether or not it helped the colony to come out strong in the spring.

We are thoroly convinced that all this packing that we have been doing is not going quite far enough; on the same principle that a thin coat might help to keep a man warm in the winter, but an overcoat would be so much the better.

It must not be forgotten that we are below the 36th degree of latitude, and that the temperature is not often below 20. Once in a dozen years it gets down to zero for a day or two. It is not often that bees are confined here for more than three weeks between flights.

As we see it, the most important part of wintering a colony of bees is to see that the queen raises a batch of late brood. With us the queen will often stop laying in the fall, and the colony go into winter with all old bees, or with bees that have seen some field service. We think if a colony is given a good feed, say a gallon of syrup in September, and the queen thus induced to lay, we get bees for winter that see practically no service in the fall. We think that, with a strong force of young bees like these, a colony will winter with plenty of feed under almost any conditions in this climate.

Our experience is that but few are getting half the returns from their bees that they should have, and that better hive-bodies and better winter protection will pay handsomely for all the expense involved.

Our bees are all in tight boxes, well painted, with no cracks or wind-holes. We have generally contracted the entrance in the fall by a liberal use of mud, closing the entrance to three inches by ⅜ inch. One of these days, when we can spare the money and the time, we are going to buy winter cases for all our colonies, even if it does cost. We confidently expect that it would pay us handsomely to go the limit in this better protection.

J. E. Johnson.

Mount Airy, N. C., Sept. 5.

The Bee Business in Manitoba

[The article printed below has been sent to us by a business firm in Winnipeg, Canada, which frankly admits that it has self-interested motives in advertising the bee possibilities of Manitoba, but adds: "This (bee) article has been handed us by a salaried official of the Government, and we hand it to you to deal with on its merits. It is absolutely reliable, for it has been prepared by one who has access to full information on this subject." With this explanation of its origin, we print the article below, and shall be glad to receive confirmation of its truth from some of our Manitoba friends. —Editor.]

Can bees be successfully wintered out of doors in a cold climate? From all accounts that question is to be answered once and for all in the Province of Manitoba, which has a reputation greater, perhaps, than it deserves, for its No. 1 hard weather in winter. Farmers in Manitoba have gone into beekeeping extensively in the past few years and have found it at once the least troublesome and by long odds the most profitable of all "side lines" on the farm. That they have found it profitable is proved by the fact that where 100,000 pounds would be an outside estimate of the honey produced in Manitoba five years ago, official statistics show a honey crop of over 800,000 pounds in 1916.

Two years ago experiments were carried on on a small scale in outdoor wintering. Last year these experiments were multiplied with almost complete success. This winter they will be tried on a larger scale than ever; and if the same success attends the work this winter as was evident before, the question will be considered settled. Attempts at outdoor wintering were induced by the troubles found everywhere in cellar wintering, where dampness and varying temperature often play havoc with the hives. The method tried in Manitoba was to put large numbers of hives in big packing-cases, with a one-foot filling of oat chaff or sawdust between the stacked hives and walls of the packing case, leaving only a small ventilating hole. The cases were simply left out in the yard in indifferent shelter, and exposed to snow and weather of all kinds. Healthy, happy, hardworking bees emerged in spring in practically every case with a minimum of winter casualties. The test in the winter of 1915 was unusually severe, as it was the hardest winter known in western Canada in many years, so that the results were looked upon by farmers and experts alike as almost settling the question without doubt.

The Province of Manitoba is fast becoming one of the leading beekeeping provinces of Canada, due to a great extent to the plentiful growth and exceeding sweetness of honey-producing flowers, coupled with the abundant sunshine which allows the bees to gather freely. Official statistics show an average yearly crop of over 100 lbs. per colony while yields of 200 and even 300 pounds per colony are not infrequent. Manitoba honey is of exceptionally fine quality and flavor, and the market readily takes every pound shipped at prices higher than prevail for the imported article. Fine work has been done by the experts of the Manitoba Agricultural College in dealing with local troubles, with the result that bee diseases, so much dreaded by all beekeepers, are practically unknown to the province. Farmers have been well instructed, and several have turned their attention to the business on a large scale.

Hives Wrapped in Paper and Burlap

My method of wintering bees is adaptable more especially to those who are beginners or who keep only a few colonies.

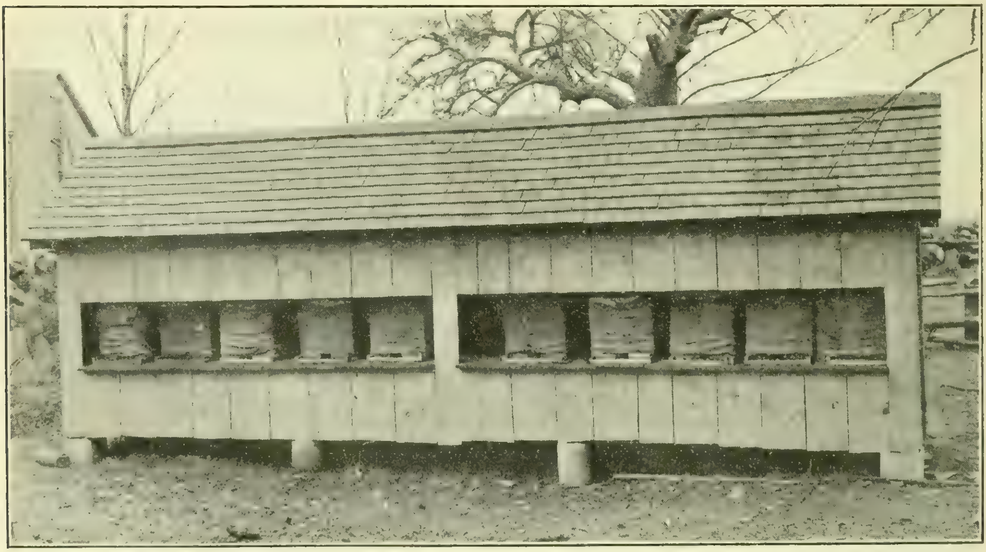
I have two sheds of the type shown in the picture, each accommodating ten colonies. I first put on each hive an empty super, and in the super a chaff cushion. I then take newspapers and fold them so there will be twelve thicknesses, and with strong twine I tie them around the hive. I then take burlap and put over the paper, and with a sail-needle and twine I sew it on tightly, and my bees are well protected from the most severe weather. I use on all my hives a super cover with a glass panel; and when I wish to look into the hive all I need to do is to remove the hive-cover, take out the cushion, and then I can see the location of the cluster.

I have followed the above plan for several years, and in my location it has given fine results. I rarely lose a colony that goes into winter quarters in normal condition. I use the same covering year after year, so that the expense is only a trifle.

I have practiced the roadside plan of selling for five years, having in view of all passersby a sign, "Pure Honey for Sale." In this way I sell a large part of my crop.

Rev. J. M. Lewis.

North Westport, Mass.



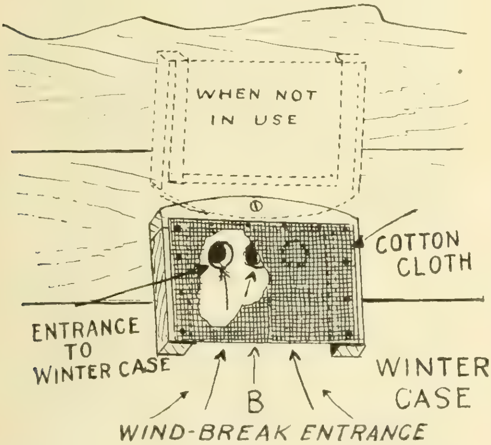
J. M. Lewis has very few winter losses. Each hive is wrapped in 12 thicknesses of newspaper and then enclosed in burlap.

FROM THE FIELD OF EXPERIENCE

Winter-case Entrance Protection

Among the many beekeepers who work quietly and practically, who never write for the apicultural press, is Wm. Atkinson, Selkirk, Ontario. Recently while visiting Mr. Atkinson he showed me an outer cover for a winter-case entrance. He told me what others, including myself, have amply proven, that the cold winds are very injurious to the bees. He also said that the sun's rays shining into the entrance tend to draw the bees out of the case so that frequently they chill during their flight and are lost.

Mr. Atkinson's device consists of a board fastened over the regular entrance of the case with one screw. This board, as explained in the illustration, protects the bees from the direct wind or the direct rays of the sun. The entrance for the bees thru the case being thus protected the bees can better draw the dead bees to the outer edge of the case and drop them out. The bees, after reaching the outer edge of the case entrance, have to go downward to reach the outlet in the cover to the true entrance, which is about two inches lower. In other words, the inner entrance, or the entrance to the winter case proper, is covered by a board which has a downward entrance thru it, so that the wind is broken, because the two entrances are not opposite one another.



I do not hesitate to say that this device is valuable wherever there are strong winds and a low temperature. It has the advantage also that it is very simple, and can be added to any winter cases which the beekeeper may have. R. F. HOLTERMANN.

Brantford, Ontario, Canada.

Why they Swarmed in January

Do your bees ever swarm in winter?

I have twenty hives in my backyard apiary, and winter under the long-shed plan, with open front to the south. One day in January my wife, looking out from the kitchen window, said, "Your bees are swarming!" I rushed out and found the bees pouring from one of the hives in about the middle of the row. The snowbank along the front was well covered with bees crawling about and dying. I put a small strip of wood in front of the entrance to close the hive, lifted the cover, and peeped into the brood-chamber. It was alive with bees, buzzing with all the vigor of a summer-day activity.

Well, I thought, here is the drifting trouble again. This hive has collected so many bees that they are too warm inside, and perhaps have used up all the stores and are making a desperate effort to get out and find something. Forthwith I condemned the shed plan of wintering.

I pulled the hive out and carried it to another part of the yard. It seemed heavy enough to have plenty of honey, and the glance I had at the combs showed some of them with capped-over cells. This was enough to prove they were not starving.

At any rate we were on the track of something, or at least my Boston terrier was; for no sooner had I pulled out the hive than the dog jumped into the opening and dug out a rat's nest that had been made under the bottom-board. The rat was somewhere under the shed, but we did not succeed in routing it out. However, that night it came out and made a new nest under a pile of building-blocks; and by moving these the dog caught it and soon ended its career. The next day I examined the colony. It had settled down to a small cluster that was decidedly weakened and had to be nursed to bring it thru the winter.

The rat had kept up a continual bumping on the bottom-board as it moved about arranging its nest, until the bees were aroused to such a frenzy they had rushed out into the snow and cold of a winter day, ready to die in the defense of their home—foolish bees! Also foolish rat, to make a nest under a hive whose owner has a good dog and values his bees far more than any rat, dead or alive, and likes dead rats much better than live ones.

DR. C. E. BLANCHARD.

Youngstown, Ohio.

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

"I have kept a few hives of bees for two seasons, and the past summer gave me good results, therefore I am looking forward to the time when I can depend upon the bees for our living. Do you think it will be safe for me to enter this business as a profession, and depend upon beekeeping for a livelihood of myself and family?"

This is a question I have often been asked, and perhaps it is well to look the matter over more carefully than has generally been done. With a man or woman adapted to the business, a suitable locality, and the adoption of sound business methods, apiculture will compare favorably with other rural pursuits. However, I wish to say there is no other branch of agriculture so apt to mislead a beginner, and inflate him with the belief that a fortune for him is just ahead as that of beekeeping. He is apt to figure from results that have been secured on a small scale, and argue that all he has to do in order to bring about the same results on a larger scale is to increase the business. Sooner or later he strikes an adverse season, and, lo! his bubble has burst, and he begins to realize some of the uncertainties. Then he may go to the other extreme of discouragement, and dispose of his few remaining colonies for about the original cost of the bare hives. If he does this, such action proves conclusively that he is not adapted to the business. If he were adapted to it, he would take care of his hives and combs—do the best possible, and wait for better conditions. Other branches of agriculture are subject to failures. The farmer is never certain of a crop when he puts the seed in the ground, but on the whole his occupation is as certain to bring results as any other, and more so than many. So it is with beekeeping. We can form a correct estimate of the relative value of the industry, as compared with others, only by taking a number of years together.

I believe it is well understood that beekeeping is not an occupation in which we can easily become immensely wealthy. In the very nature of things it could not be so. Like the keeping of poultry, the raising of small fruits, gardening, and other minor branches of agriculture, the keeping of bees in localities adapted to the business can be depended upon to furnish the owner a comfortable living; but such fortunes as are amassed by the railroad king, the coal baron, or the Standard Oil Company, can never be hoped for by the beekeeper. Fortunately, however, the perfection of a man's happiness bears but little relation to the size of his fortune. Many a man with the hum of bees over his head finds happiness sweeter and deeper than ever comes to these amassers of wealth from others' labors.

Apiculture is an ennobling pursuit. It brings out the best there is in a man, and it keeps him close to nature. But can it be depended upon for a term of years as a means of supporting the family? In some localities it can; in others it can not. Where there is only an unreliable source of honey, no man can depend upon bees alone. In case we wish to adopt beekeeping as a profession, a location must be chosen possessing at least one unfailing source of honey, or else several sources, some one or more of which will most surely furnish a crop. Location is a great factor; but management and a thoro knowledge of our location is the most important of all. It will not do to be like a beekeeper I once visited who was so ignorant of his location, and so negligent of the wants of his colonies, that he told me that he expected the bees to do well when the basswood came into bloom, whereas basswood had come and gone; and the energetic bees, having had no surplus arrangement provided in which to store the honey, had just filled their brood-combs all that they could, and then loafed the time away, or else had built comb under the hive-stands. With a good knowledge regarding all of the minor resources of his field, and with a management which would leave no stone unturned to meet the basswood bloom, and with everything in readiness at the opening of the first blossoms, doubtless an average yield of 100 lbs. of comb honey, or 150 of extracted, could have been secured from each old colony in the spring.

Many who attempt beekeeping as a specialty are lacking in business methods. They attempt too many make-shifts by way of experiments with hives, implements, and the like. Very few enter the ranks of apiculture without really thinking and believing that they can invent a better hive, or something pertaining to bee culture, that is superior to that which has been used by those who have gone before. I know there is a certain fascination and enjoyment in this; but the best success is sure to come by taking the things which the most successful apiarists use and adopting them.

Enough bees should be kept so that, when there is a good year or two, enough money may be made to tide over a poor season that is quite liable to come. Having two or more out-apiaries tends toward a more even yield of profit. The very fact that the bees are scattered about in out-apiaries, several miles apart, adds to the certainty of a crop.

Borodino, N. Y. G. M. Doolittle.

* * *

Letters from a Beekeeper's Wife

Outdoors, October 1, 1917.

Dear Sis:

This is the second time that I have come out here to write under the trees, having been driven in before by the bees. It is such a bright, warm day that they flying about doing a little lazy gathering, and I foolishly chose the big apple tree for my back rest. I watched the bees sipping juice from the few rotting apples left on the ground and then reached out to pick up what I thought was a sound apple. Alas! I gathered up with it a disgruntled honey-bee, who took her revenge upon me for disturbing her meal. My left hand is decorated with a puffy, red spot which still burns.

I have the greatest respect for the "posthumous works of the bee," and it is evident that the bee has too, for she never forgets to use them no matter how agitated or angry she may be. Her immediate reaction to any untoward stimulus is to thrust out her barbed weapon, generally with telling effect. It seems strange that, after centuries of acquaintance with the honey-bee, little more is known today of the poison from the sting than was known to the ancients. No doubt they knew the unpleasant effect of the practical application of her poison by the bee, but they seem to have no better advice to offer for its cure than Rob's, "Let it alone and forget it."

Rob just came up the lane, home from his visit to the Capitol, and, opening his suitcase, he dropped two old books in my lap. He never can resist visiting the rare book store, where Mr. Todd puts aside old books on bees until Rob comes along. These two are extremely rare, and the oldest we now have. Rob won't tell me what he paid for them!

You would love these musty, leather-covered volumes, with their sere brown pages. One is called "The Theatre of Insects" by Thomas Moffett, 1658. Glancing thru the pages on the bee, I find this, apropos of stings, in which I take a personal and lively interest, just at present. "If you would indeed to go sting-free, or at least heal yourself being stung; expel out of your mind, idleness, impiety, theft, malice; for those that are defil'd with those vices, they set upon to chuse as it were, and out of natural instinct." Which of these vices have I, being stung? Am I impious, if I think Thomas Moffett didn't know what he was talking about, altho his language be pleasing and picturesque, or am I idle that I sit here and write to you?

Wait a moment and I'll see what words of wisdom this other volume contains about stings. This rare book is called "The Feminin Monarchi" by Charles Butler, 1654, and Rob has long wanted a copy, principally because Charles was an advocate of simplified spelling and employed it in his book, as you can see from the title. Dear! dear! according to him, any one would have to be a paragon of all the virtues to be able to keep bees without being badly stung! Just listen to this: any one who would find "favor" with his bees must "be cleanly — must not come among them smelling of sweat or having a stinking breath, caused either through eating of leeks, onions, garlick and the like, or by any other means— " (no bath-tubs nor tooth-brushes in England in his day!) "In a word thou must be chaste, cleanly, sweet, sober, quiet and familiar so they will love thee and know thee from all others." Haven't I often told you what a superior group of men beekeepers are?

Rob's old bee books are full of just such quaint and often good advice, and, considering the difficulties the beekeepers of the middle ages must have encountered in observing the life of the hive, they knew a great deal. I imagine that their beekeeping consisted mainly in letting the bees alone, a practice that modern beekeepers are coming back to, to a certain extent, I believe, for I hear Rob preaching about the evil of too much manipulation. It seems too bad that those old-time bee-men destroyed most of their bees at the end of the season, in order to get their products, for think how flourishing and profitable beekeeping must have been then, when all the artificial light depended upon wax candles, and honey was the chief sweetening!

My sting still burns, so I shall stop writing hoping thereby to "expel idleness from my mind," and thus heal it. The bee is dead! At least I hold no malice against her—she has paid the price of her revenge.

Mary.

FROM THE FIELD OF EXPERIENCE

Disappearing Bee Disease

[On page 671 of our September issue we quoted Mr. S. D. House, of Camillus, N. Y., as believing that the cause of the Isle of Wight or disappearing disease was due to the eating of too much pollen, and a lack of honey or nectar. Mr. R. F. Holtermann, of Brantford, Canada, one of the most extensive beekeepers on the continent, and one who has had a rather severe attack of the disappearing disease this season disagrees with Mr. House, and the following letter explains his reason for believing that the malady is due to a germ.—Ed.]

Your editorial giving Mr. House's opinion of the cause of Isle of Wight disease in the September number of Gleanings is before me. I will give briefly my reasons for disagreeing with him and asserting that the Isle of Wight disease is a germ disease.

The symptoms in connection with the disease under discussion have been absolutely unknown (so far as public records go) for many years—in fact, until quite recently. We have had damp seasons, we have had poor seasons during which bees gathered little honey and much pollen, and yet I kept bees for 35 years during which I came in contact with many beekeepers without ever hearing of a disease such as this. It must, then, be something more than pollen and moisture.

This year during the damp weather I noticed a conspicuous and peculiar condition in two apiaries. The bees would rush thru the grass as if trying to get away from a foe against which they had no power. The four wings would be raised and the pairs separated. They appeared to me to be emaciated and light; and wherever there was a bit of bare ground there could be found a bunch of dead bees. This disease bears no resemblance to bee paralysis. I had a slight experience with that disease fifteen years ago. Then the bees appeared paralyzed, not active. They would bunch up on a chip, entrance-block, or piece of wood and appeared to be almost unable to move. From widely separated beekeepers this season I have heard the report of symptoms similar to such as I saw among our bees this summer.

Having bees in ten apiaries and under varying conditions I began to observe that the disease showed up worst where the apiary was much shaded, and where high fences prevented a current of drying air passing thru. We had a lot of cool and damp weather during May and early June, and the ground and vegetation were almost constantly wet. In the Ebert yard I drew the attention of one of my sons to a serious condition. In a few colonies (only some colonies in an apiary appeared to have the disease) almost all the old bees seemed to have (yes, had) disappeared, and only young bees and brood were left in the hive. This apiary was well shaded. The Knisley yard was not so bad, but there were lots of dead bees in the grass. This apiary is fenced and shaded.

Then I reasoned this way: The Isle of Wight has a moist climate, and there beekeeping was practically wiped out. The germ must have a moist atmosphere to give it favorable conditions for doing its deadliest work. We have the disease among us; but it will not do us serious damage unless the season is very damp, as the last two seasons have been. As soon as the idea struck me I made large openings in the fences, let the air circulate to dry out the ground partly upon which the bees stood, and upon our next visit, some five days after, we noticed an improvement. Of course the weather was getting to be less humid; but judging from conditions in these ten apiaries I would advise, for the prevention of ravages from this disease, that beekeepers have only a moderate amount of shade in the apiary, and take enough of a winter fence down during the summer so as to give a free circulation of air about the hives. I have no doubt whatever that we would have had a larger honey crop in the above-mentioned apiaries had the disease not been present.

R. F. Holtermann.

Brantford, Ont., Canada.

[Miss Fowls, whose article appears on page 681, Sept., after reading the above, says that her father didn't kick any boards off his fence (because he didn't have any fences), and yet the disease disappeared anyway in a few days. Among Mr. Fowls' six apiaries the one where the disease was the worst this year was on high ground with free ventilation between the hives. There have been many cures suggested, such as moving the hives a few feet, changing brood, changing queens, sprinkling with sulphur or salt, feeding medicated syrup, all of which have seemed to help. But what shall we say when in so many instances the trouble disappears of its own accord? How can we tell whether the treatment is responsible for the cure or only incidental to it? The source of the trouble would be easier to locate if the disease did not mysteriously go away of its own accord; and yet we can be thankful that so far in this country it does disappear in a short time.—Ed.]

FROM THE FIELD OF EXPERIENCE

Honey Dew that Wasn't so Bad

Is it not a bold statement, when a beekeeper asserts that his honey is "pure clover," "straight raspberry," or what not? In a country of diversified growth, who can say (unless after very close and painstaking observation) what the bees derive stores from, and what they do not? From time to time mention has been made of bees feeding on exudations from certain trees, conifers, chestnuts, etc. Nor is it all "nasty dark stuff" from these sources. The latest on the subject is in your issue for January, describing how the bees worked on *Pinus glabra.* If Mr. Baldwin (page 50, January, 1917) were to visit this country in June or July he would have no occasion to show surprise at the goings-on of the Florida bees. This is a land of conifers, the coast region being covered with a dense forest of firs, spruce, hemlocks, cedars, with a sprinkling of maple, cottonwood, arbutus, etc., with a few oak in spots.

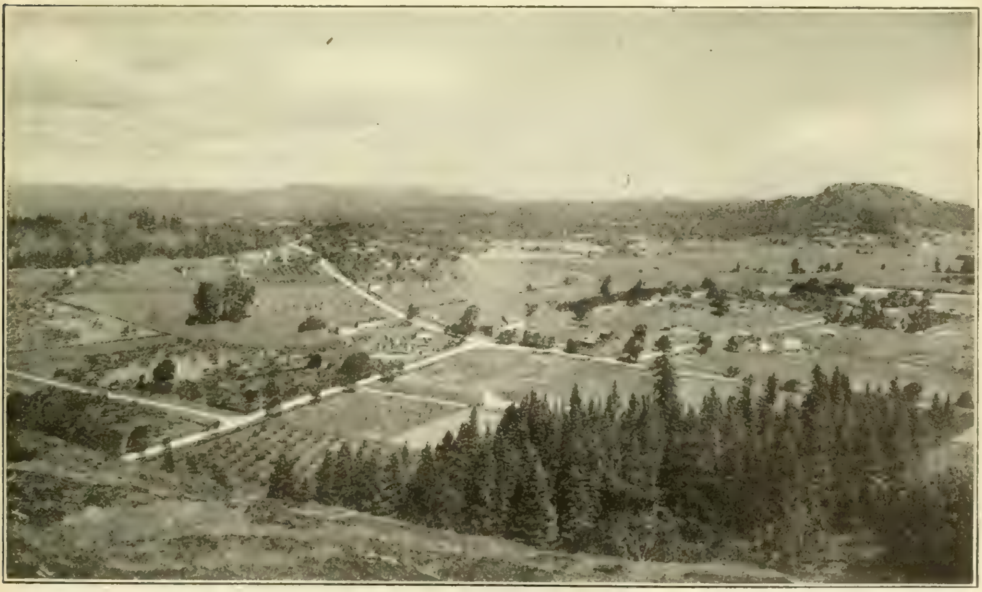
From observations extending over many years I am convinced that bees derive their surplus (thru June and July) mainly from forest growth, the Douglas fir being the chief source. In the forenoon the ground under many of the firs, particularly isolated trees, will be well spattered with the exudation, and the needles studded with pale-amber diamonds, and plenty of bees, should there be any in the neighborhood. Some seasons this source will provide two or three supers of sections. The capping is always rather dark, the honey pale amber and fair in quality, but it granulates quickly. The honey should be taken off in good time, as later something may be put in which is not appetizing.

In talking over this matter with Mr. J. R. Anderson, Ex-deputy Minister of Agriculture of this province, he states that he has often seen honey-dew in the heavy timber in such quantity that the whole of the foliage looked as tho coated with varnish. Altho bees gather this at the outskirts of the forest, he thinks they do not go far into the forest in search of feed.

There is but little else for the bees in this district, Southern Vancouver Island, the famed white clover being a negligible quantity.

Some years ago we had a serious visitation of cutworms, about midsummer. A field of carrots was badly infested, and was visited at the same time by bees in large numbers feeding on the bitten tops and leaf stems. I never heard of carrot honey, but no doubt some was gathered that season.

Victoria, B. C. E. Fleming.



A bit of beautiful hill country in British Columbia near Victoria.

FROM THE FIELD OF EXPERIENCE

Wintering in Florida and Summering in the North

There is not a beekeeper from the northern portion of our country who is more welcomed to Florida during winter than G. H. Adams, of Schenectady, N. Y. He is a keen active lad of 65 winters, and has been keeping bees since he was 16 years old.

There is, perhaps, no one else who has come so near solving the problem of beekeeping north and south. First he spent a winter here looking around and planning; and by the time he was ready to go back north he had bought a small orange-grove and a small plot for an apiary site. He was so anxious to get back south to carry out his ideas that he could scarcely wait for the summer fully to pass.

Before we hardly knew it he had bought bees all about the country, including one yard of 55 colonies located a few miles from Bradentown. As soon as the first honey-flow came on, he increased this apiary to 81 colonies, the increase raising their own queens besides a few to replace those he killed. A small per cent of these queens were lost in mating, and such queenless colonies he set to work building more queen-cells.

On again coming south for the winter he found seven colonies dead and their combs eaten by moths, but these were the weaker colonies and did not contain much comb. This left him 74 colonies all in the best condition. I was much interested in this venture; and so when Mr. Adams reached his apiary I was on hand as were also several other beekeepers. I took a picture of the yard before it was touched or molested, just as it was left six months previous (see cut). Weights had been put on each hive for fear a storm or heavy wind might blow off the covers. We were surprised to see what the "let-alone plan" had done and how small was the variation in the amount of surplus stored by each colony. They were rousing colonies, and yet they had been obliged to build most of their comb two in each brood-chamber, and all but one or two combs in each super. Every super had been given one or two combs for bait to induce the bees to store above. Also each top super was raised half an inch at the rear, leaving good ventilation above the cluster. This, together with the cut-up condition of the brood-nest, and the great amount of storing room above, must have helped in the prevention of swarming, and thus been the direct cause of more storing. The amount of surplus stored must have averaged considerably over 40 pounds. The original 55 colonies cost him $290. There was also the wax, the increase, and the ready-built combs.

By trying such a plan it seems to me other Northerners might winter in the South, and at the same time make something above expenses.

Bradentown, Fla. J. J. Wilder.

Florida apiary owned by a northern man, G. H. Adams, left entirely alone from spring until fall.

FROM THE FIELD OF EXPERIENCE

Wintering in the South-Central States

We of the "Sunny South" are very much inclined to look on the problem of wintering bees as being one of little importance, generally trusting to "luck" to get the bees thru any old way. As a matter of fact, altho we do not have the long cold northern winters to contend with, the problem of bringing the bees thru the winter months in the best condition, with the least loss of vitality, and with a moderate consumption of stores, is a serious one.

I may not be "orthodox," but I must admit that I am not an advocate of expensive and troublesome methods of packing bees, believing that in this climate (Arkansas, Tennessee, and the Carolinas) we can get good results without packing by giving attention to a few simple but important details which have to do with getting the bees in a proper condition for winter.

Here are four essentials for successful wintering, and they may be had with slight cost of time or labor. 1. A large force of young bees at the beginning of winter. With a young queen and a fall flow, this will be the natural condition of affairs; but should there not be enough nectar coming in to keep up brood-rearing during September and October, then we should resort to slow feeding in order to stimulate the rearing of brood. Diluted honey or thin sugar syrup should be used, and a little given each colony every day or two for a month.

2. Plenty of good stores. This means twenty-five or thirty pounds of sealed honey or syrup (not honey-dew) in the combs of each colony; and if there is more it will not be wasted. In case you have to feed for stores it is best to give the required amount at one or two feedings, and this should be done before very cold weather sets in. A caution to beginners just here—always feed late in the afternoon, and be careful not to start the bees to robbing.

3. A good tight hive, preferably two stories, as this gives plenty of room for stores, and clustering space in the warmest part of the hive. This also provides plenty of breeding room in the spring, which a one-story hive does not. There should be a good cover to keep off the rain, and a double one with an air-space is best.

4. Protection from the cold north and west winds. This may be afforded by build-

One of J. M. Buchanan's out-apiaries ready for winter, each colony being in a two-story hive ings, a tight fence or wall, shrubbery, such as evergreens, or a hill or bank of earth. Cold winds are more harmful to bees than much colder still air; and colonies in the open, or in exposed positions, will suffer even with heavy packing.

Winter cases, chaff, or sawdust packing, tar-paper, etc., may help to some extent in the conservation of stores; but I am convinced that in this climate, with our open winters, where the bees can have a flight nearly every week, extensive and expensive packing will not pay in dollars and cents, and that is what counts with the honey-producer. With our long breeding season we can get the bees built up to rousing colonies in time for the surplus flow; and if they reach that stage too early they are likely to swarm. And for storing I had rather have a moderate-sized colony that has no inclination to swarm than a very large one that persists in going on a picnic in the middle of the honey-flow.

Statistics show the winter loss of bees to be very high in the South; but when we take into consideration the great number of careless or ignorant beekeepers, and their slipshod "let-alone" methods, we can see at once that it is due to starvation and neglect rather than to cold weather that the death-rate is high. Strictly speaking, these should not be counted as "winter loss" at all, since a large number of colonies swarm themselves to death, or starve out in the late summer or fall. Among the well-informed and careful beekeepers of the southern states the winter loss of bees will be found to be very low, perhaps one or two per cent being a fair average.

After all, the real "problem" is how to reach the class who will not read, or who, if they read, will not profit.

Franklin, Tenn. J. M. Buchanan.

* * *

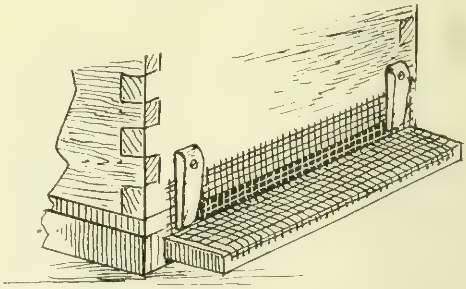
Outwitting the Mice

In spite of the fact that people have solemnly assured me every animal was created for some purpose, I have never yet heard any logical reason for the creation of mice—particularly the mice which do so much damage in the hives. Each fall, as soon as the farmers start to take the fodder from the cornfields, the trouble begins. Every mouse in the fields seems to think his chief duty in life is to make his home in one of the nearest hives. These mice are field mice or, as some people call them, woods mice. To be sure, ordinary house mice will destroy colonies or empty combs kept in cellars of buildings; but out of doors it is the field mice which play havoc with the bees.

Two other important features about them are their strength and their almost human ingenuity in outwitting people who try to keep them out of beehives. I have repeatedly shoved entrance-blocks in place only to find, the following morning, that one end of the blocks was again pulled out about an inch. As the only kind of animal to which that size of space would be of value is mice, they must have worked at the blocks until they had them out.

These field mice, if they have the least opportunity, will make their nests in the hives. The nests, made of twigs, straw, or any other available material, are round hollow balls almost twice as large as a base ball. There are always two entrances opposite each other in the upper part of them. They are built where the comb is eaten away. If mice once get into a hive the colony is practically doomed. If the colony is not killed outright, there will be so few bees left that the beekeeper would be wasting his time to build it up again.

There is one convenient way of keeping these mice out of hives. It is by holding the wire entrance-guard securely in place with a couple of small wooden buttons fastened on the front of the hive. As short screws are used for fastening on the buttons, three or four turns of a screwdriver will put them on or take them off. They can easily be taken off in the spring out of the way during the busy season and put on again in the fall. With these entrance-guards, if the beekeeper wishes to remove the dead bees from the bottom-board during a long cold spell he can, by shoving aside the buttons, take off the wire without disturbing the colony in the least. There is never any jolting or pounding.



Northeast, Md. Ruth C. Gifford.

SIFTINGS

J. E. Crane

THE crop of honey in western Vermont will not be as large as was expected early in August. The hot dry weather in the latter part of July had checked the flow to such an extent that the supers were very light.

* * *

BOTTOM PACKING NOT NECESSARY.

Mrs. Allen says, page 376, May, that Mr. Bartholomew, backed by Dr. Phillips, "maintains that unless all four sides, top, and bottom, are packed, no good is gained." I have about 200 hives packed on the bottom as well as sides and top, but have been unable to discover that bees wintered any better in them than when packed on four sides and on top, and have discontinued bottom packing.

We have, however, noticed a great difference between colonies in single-walled hives and those in double-walled hives in the time it takes them to build up in the spring. Double-walled hives are of quite as great value in such a cold spring as the last in building up colonies as in wintering them.

* * *

Mr. Doolittle gives good advice on page 440, June, in regard to getting bees to work in sections, but, unfortunately, we do not have more than one year in twenty-five when bees can be induced to start combs in sections in August or September; besides, we have very few sections made up at that season. A better way, to my mind, to start those colonies that are a little slow in getting to work in sections is to take a well-started super from some other colony and give or exchange with the slow colony. If honey is coming in freely it is not necessary to get the bees all out before the change is made.

* * *

That picture of a brood-comb, page 539, July, seems a marvelous production, showing how perfect photographers have become. We can see by the color the different ages of the sealed and very perfectly the unsealed larva from two to five days old and even eggs in the base of the cells, and in others the reflections of the light that we sometimes mistake for eggs.

* * *

E. G. Baldwin, in Florida Sunshine, page 705, becomes enthusiastic over the advance in the price of honey. He says, "Honey, for once, has advanced nearly apace with other similar commodities, and prices are now stiffer than ever before in the history of the industry." Beg your pardon, Professor B., but we used to get 30 cts. a pound or more for comb honey at wholesale, forty or fifty years ago, and 25 cts. for extracted; but it was a long time ago, and I guess you have forgotten. About 1880 prices began to tumble until it seemed as tho we should have to go out of the business, but we are still at it.

* * *

James A. Brown gives interesting facts about the value of honey as an article of food. More and more we are learning the fact that honey is not only as cheap as other articles of food but at the same time is a delicious sauce. Many persons refrain from buying honey because they think it of little value as food. More persons will buy when they learn that it is just as economical to buy honey and pay 20 cts. a pound as to pay the present price of 48 cents for butter.

* * *

Some years ago it was the fashion to speak of the superior value of sugar as a winter food for bees; but of late it is the other way; honey, we are told, is better. Well, perhaps; but we get along very well by supplying any lack of winter stores with sugar syrup. Pollen is rich in protein and other elements necessary for the production of brood; and when we have a supply of pollen we do not worry.

* * *

Beginners' Lessons, page 699, September, contains some lessons older beekeepers might take to heart, especially in regard to nailing up cases of tinned honey and preparing barrels for honey. It seems queer that soaking the barrels with water only increases the danger of leakage, but it is a fact.

* * *

Many bee-inspectors can appreciate the inspector's embarrassment when threatened with a shotgun, as told by a beekeeper's wife, page 604, August; but after all I prefer that to the stolid indifference of many beekeepers.

* * *

We learn from page 697 that John M. Davis presented Mrs. Allen a queen and received in return neither gold nor silver, but a gem we may all enjoy.

STRAY STRAWS

Dr. C. C. Miller

A BEE that appears worker with clearly the abdomen of a drone has been sent me by The Stover Apiaries, the third one of the kind found there this year. I've read of such freaks, but this is the first one I ever saw. [Numerous specimens of these hermaphrodite bees have been sent us from time to time. Sometimes we find a worker's body with drone head, and at other times a drone body with a worker head. Sometimes the eyes of the drones are bright purple, a light pink, or red; but these would not be true hermaphrodite bees but merely sports.—ED.]

YE EDITOR, p. 709, advises, in uniting colonies at some distance apart in the same yard, to leave on the vacated stand a comb and empty hive to catch the returning field-bees, and to return these once or twice. Why does he say nothing about the easier and better way, the newspaper plan? Is it because that plan is my baby, and he has a spite against me, or doesn't the plan work at Medina? When the bees are imprisoned over the newspaper, and at first unite one by one, there is not only the advantage that there is no fighting (sometimes there is fighting when they are directly united), but the imprisonment has the effect of inducing them to remain in their new place. [The advice we gave on page 709 referred particularly to the beginner. There is some danger of uniting on the newspaper plan, for the reason that the novice might inadvertently select a hot day to do the work. The result would be melted-down combs and suffocated bees. While this is not likely to happen at the time the bees should be united, it is always a possibility. Your plan is all right so far as we know. We have been testing it out this fall particularly, and so far it is giving excellent results. There is a slight returning, but not nearly to the extent that there is with other methods.—ED.]

THIS was, I think, about the worst year I ever knew. The main harvest has been 12 pounds per colony. To be sure, in the past there were years in which I got absolutely nothing, and had to feed for winter; but if I had one of those years over again, with my present bees and knowledge, I think I could beat 12 pounds. I'm *hoping* for a fall flow. [A few years ago you broke the record in big yields per colony in the production of comb honey. You have had a reputation of doing well with your bees other years. Your light yield this year with extracted may be a sort of satisfaction to the other fellows who have had almost a failure, and who might be inclined to charge their failures to inexperience. But when one of the old Gamaliels, and a man who has broken the record in comb-honey production, falls down, some perhaps will be glad of it, as it will prove that even a good man cannot make bricks without straw, or, more exactly, produce a crop of honey without nectar in the fields. On the principle that misery loves company, there will be a lot more who will love your company.—ED.]

S. E. MILLER, p. 714, tells of his tribulations with honey candied in the tank, in order "to draw out the *modus operandi* of some fellow who knows a better way." May be he would think my way a better one, and that is not to allow the honey to candy in the tank. I'm only a beginner at extracted honey—been at it only two or three years—and I feel sure I'm not well up on it; but one thing I've never had any trouble with, and never expect to, and that is melting candied honey that is intended for sale. On top of the honey-tank is a strainer *a la* E. D. Townsend, and the honey goes directly from the extractor to the tank without the nuisance of using the strainer that comes with the extractor. Then when the honey has settled in the tank, it is drawn directly into five-pound pails, where it can stay liquid as long as it likes or candy at once, just as it pleases. It's all one to me. The label on the pail says: "The honey will candy during cold weather. To liquefy candied honey put the pail in hot water. Do not let the water boil." Having put on that label, my responsibility ends. The consumer can melt it or eat it candied. And I've never heard a word of fault.

"THE BEES of the hive in question never rob from their own hive by entering above," p. 698. That's new to me, yet I never knew anything to the contrary. Still, I can't help wondering, if no other colony was within reach, and an escape was put under the supers in a time of dearth, how long the honey would remain undisturbed in those supers. [Miss Fowls reports that they have put unfinished sections above an inner cover containing a small hole, and that the bees carry it down. That is easy to understand, and your last proposition is very much like it. I shall have to confess that I put the parenthesis in afterward, forgetting that I was talking about the use of the bee-escape, separating the supers from the brood-chamber below. I agree that in all probability the bees under such circumstances might soon rob their own honey and store it in the brood-combs.—H. H. R.]

P. C. CHADWICK says, p. 700, that beet sugar is now refined so that there is no chemical difference between it and cane sugar. I think that has been the case for years, yet is it not possible there may be no difference *chemically,* and yet a difference? Is there any chemical difference between diamonds and charcoal? At any rate the *British Bee Journal* stoutly insists that the difference between beet and cane sugar is such that beet sugar should never be fed to bees. For all that, I suppose tons of beet sugar have been fed to bees with no bad results apparent. [Chemically the two sugars are one and the same, and practically we have never been able to detect any difference. We have heard that some housewives prefer cane sugar for canning. But how are they or any one else to know whether it is cane or beet unless they buy from a beet-sugar refinery in the locality? In this case the sugar would be, unquestionably, beet.—ED.]

L. E. WEBB has sent me a section of "real mountain sourwood honey." It is pronounced "good" to "delicious" by those who have sampled it; but the thing especially interesting is that he says, "I averaged over 75 lbs. per colony of pure sourwood, getting 25 cts. per section or bulk on our local market without even delivering it." [We have tested this same sourwood honey. It is one of the finest honeys we have ever eaten. Indeed, we see no reason why it should not rank right alongside of orange-blossom, white-clover, basswood, mountain-sage, alfalfa, and other fine table honeys. It not only has a very mild and fine flavor, but a sort of tartness that gives it a sort of lemonade suggestion. We are not at all surprised that it should bring 25 cents a pound at retail.—ED.]

WESLEY FOSTER says, page 707, that "Honey is used much more in cooking in Europe than has been the case in this country," and that consumers pay more for it there than here. It might be worth while to go to some trouble to find out why this is so. If Europeans use it in spite of the high price, would they not use it more if the price were the same as in this country? If so, one would naturally suppose it would be used more for cooking here than in Europe. But it isn't. Now why? Who will tell us? [Perhaps some of our subscribers born and reared in Europe could give us the "why" propounded by Dr. Miller. However, when honey is relatively cheap, and sugar high, the great baking concerns of the country have used almost shiploads of honey. At the present time the ratio of difference is such that these same concerns will use invert sugar in place of honey.—ED.]

AMONG the bad things of the war are some good ones. Thousands—possibly millions—of young men are today reading the Bible who would not have been doing so but for the war, and the demand for Bibles is without precedent. An item in a Chicago daily says:

> The American Bible Society's presses have been running sixteen hours a day since May 1, and about 400,000 Bibles have been printed, but it is still far behind its orders, one of which is for 1,000,000 Bibles for the Y. M. C. A. for use in the army.

C. L. HILL tells about grocers that paid ½ cent for beets which they sold for 8 cents, and wanted 50 per cent on honey, p. 594. Please don't judge all grocers by them. Marengo grocers are nice people. I generally set the price they pay me, and also the price they sell at, and they are satisfied with about 25 per cent profit. I'm trying to sell all I can to them.

FEEDING for winter half sugar and half water is advised against, p. 711, because the hard work of reducing would exhaust too much the vitality of the bees. Another reason is that, if fed very late, the bees would not be able at all to reduce the mixture to the proper density. If fed early enough, half and half would be all right; but no doubt late feeding was in mind.

"WE PUT sheltered location first, and winter packing second; but both, for outdoor wintering, are essential." So says Editor Root, p. 711, and it can hardly be emphasized too much. Protection immediately touching the hive is needed; but what counts most is the protection two feet or ten feet from the hive; and possibly more important is the protection many rods away.

"COVER the jelly when cold with melted paraffin, tipping the glass so that it comes up a little on the side," p. 695. I've read of an easier way: Put a lump of paraffin in the glass, and pour upon it the hot jelly. Perhaps Mrs. Puerden will tell us whether this will work as well.

BETWEEN 100 and 200 tons of dark honey in San Francisco alone is used in making sweet crackers or cookies, according to a correspondent in *The Western Honey Bee.*

OUR FOOD PAGE

Stancy Puerden

THE last week of August the editors of GLEANINGS delighted my heart by suggesting that I go to Chicago to hear Herbert Hoover talk to editors and publishers of farm journals. It didn't take me long to decide that the garden, the canning, the corn-drying, and even the children could get along without me for a day or two.

There were one hundred and twenty-six farm journals represented at the meeting, from twenty-four states, and the purpose of the conference was to develop a closer working relation between the Food Administration and the farm press. It was the first time Mr. Hoover had left Washington to make an address since he came to this country to take charge of the Food Administration work. He came in quietly, just at the hour set, and, after shaking hands with the representatives of the various papers, began his talk. He stood leaning slightly forward with the tips of his fingers touching a table on which were his notes, and spoke in a low voice, choosing his words with great care. He is a modest-appearing man, and one had the feeling that he was most anxious not to be misquoted. When he is looking down he looks incredibly young to have had the responsibility of the greatest organized charity the world has ever known, for two years; but when he raises his eyes they look tired and very serious, and the man seems years older.

In this limited space I can touch on only a few of the points he made. He told us food problems would have arisen whether our country had entered the war or not, and that they are really easier of solution now, as we can summon patriotism and devotion to our aid.

He dwelt at length on the great need of stimulation of production and reduction of consumption and waste. He said, "*Unless we can keep the women and children of our Allies fed, the western line of the war will surely be thrown to our Atlantic Seaboard, and it may be thrown to an infinitely more dangerous quarter in the ransom of Canada as penalty of England's defeat.*" He told us that, in spite of promises of an abundant harvest in the United States, our supplies are going to be far below our combined necessities. Our exports to our Allies this year must be mainly wheat, meat, especially pork, and dairy products. We must learn to use substitutes from our abundance of other products ourselves in order to export these concentrated foods.

He talked in a most interesting way of the purpose of the Food Administration to keep prices reasonable, and on the other hand see that the producer gets a fair profit. It is also their object to eliminate speculation in food, and he told us of many plans with this in view. One thing he said which I have not since seen in any published report of his speech, and it was something like this: "We are trying to equalize the burden of this great war so that it will not fall harder on one class than another."

He believes that even if the war had not come we were due in a few years for an economic revolution, for our productive capacity in food stuffs has fallen behind our productive capacity in industry. To quote him again, "If I interpret the signs correctly, the farmer is coming into his day, and it is the duty of all of us to support him."

At the close he said, "*I resent the statement that the Food Administration is dictatorship. I have seen the suffering of ten million people under the wrongs of dictatorship. Food administration as much as any other function of democracy must be founded on the consent and good will of the governed.*"

And now, Mr. Beekeeper, will you let me say just a word to you? In the course of Mr. Hoover's talk he told us about the great shortage of ships, and that it is affecting our imports as well as our exports. That is one of the reasons for the sugar shortage, and here is where the bees will arise to the occasion if the beekeeper will do his part. I have often heard Mr. A. I. Root tell about the first barrel of honey he produced, and how people could hardly credit the statement that he had such an enormous amount of honey. I can remember when the first carloads of honey were brought east from California. Until very recently no one beekeeper in the East produced honey by the carload, but now there are a number in the white-clover belt who are selling honey by the carload from their own apiaries. And I for one have faith to believe that the industry of beekeeping is just in its infancy. The time may come when honey, the oldest sweet mentioned in history, will be used as freely as sugar. Here is a subject which I should like to see discussed in GLEANINGS the coming year, "How much nectar annually goes to waste in our country?"

Yes, Mr. Editor, I am going to address the rest of my advice to the lady readers, but you cannot deny that some nice men read this page. One man wrote he had canned sixty quarts of raspberries by the method I gave for small fruits in the July number. He said he was a bachelor, and I could not help regretting that such good husband material is being wasted.

Below I am giving a recipe for honey tomato preserves, followed by a number of cornmeal recipes. I find it easier to work in such dishes nearly every day rather than have one wheatless day a week, and the same result is accomplished. The frequent use of cornmeal is no hardship whatever to the Puerden family.

HONEY TOMATO PRESERVES

1 qt. tomatoes peeled and cut small,
3 cups extracted honey,
¼ lemon shaved thin,
½ oz. ginger root.

Cook the tomatoes about thirty minutes in their own juice, and then add the honey, lemon, and ginger, and cook until it will drip from the spoon in two or more drops. Pour into sterilized jelly-glasses and cover with melted paraffin when cold. Cinnamon bark or cloves may be substituted for the ginger root if preferred.

When I was a small girl I had an uncle who knew how to make most delicious hoe cake. He had learned it from an older brother who was a prisoner in the South during the Civil War. In working over this page late one evening I was suddenly seized with a desire to try hoe cake, and I worked out the recipe given below. I had seen my uncle do it; but as he had never measured anything I had to experiment a little. You ought to have seen my diet squad, the Puerden boys and their dad, sit up and take notice when I brought in the plate of crisp, crusty hoe cakes. The fragrance alone was a treat. They ate them split and buttered; and when I asked for criticisms they said feelingly and unanimously, "Double the recipe next time."

HOE CAKE

1 cup cornmeal,
3 cups boiling water,
1 teaspoon salt.

Pour the boiling water slowly over the cornmeal and salt, stirring constantly, and then put over the fire and cook until it thickens and boils up well. Have gem-irons sizzling hot and put a large spoonful of the mush in each one. Bake in a very hot oven until brown and crisp. A griddle or iron frying-pan may be used instead of the gem-irons.

POLENTA

¾ cup cornmeal,
3 cups boiling water,
¾ teaspoon salt,
¼ cup cheese.

Sift cornmeal slowly into boiling salted water, stirring constantly to prevent lumping. Cook in double boiler three hours or more. Add cheese grated or cut small, pour into a well-greased pan, slice when cold and fry like mush.

SPOON BREAD

3 cups milk,
½ cup cornmeal,
2 eggs,
½ teaspoon salt.

Heat milk in double boiler. When boiling hot stir in cornmeal and salt, and cook to a smooth mush that will pour rather than drop from the spoon. Take from the fire and add the slightly beaten yolks of the eggs, stirring constantly. Then fold in the beaten whites of the eggs and bake in a moderate oven half an hour. Serve from baking-dish with a spoon. Butter and honey should be served with it. Any dried fruit may be added to the spoon bread.

We have been enjoying whole-wheat flour which we have ground ourselves in a hand gristmill. We are planning later to grind some of our own home-raised field corn, and thus have the delicious taste of the germ which is removed from the commercial cornmeal. These little gristmills can be obtained for $2.50 up. Here is a recipe for war bread as made in the Puerden home. I usually use about half home-ground whole-wheat flour, but the proportion can be varied to suit individual taste. All white flour may be used instead of the rye. As flour varies much in thickening power you may need to increase or decrease the amount somewhat. Lighter bread will result if you remove the coarse bran by sifting. The bran may be used later in the muffin recipe given below.

WAR BREAD

1 cake dry yeast
1 cup warm water
3 tablespoons flour
2 tablespoons honey
1 tablespoon salt
3 pints boiling potato water
2 quarts white flour
1 quart rye flour
3 quarts whole-wheat flour

At 5 P. M. put yeast cake to soak in cup lukewarm water. Scald the three T. flour, 2 T. honey, and 1 T. salt with 3 pints boiling water drained from potatoes. When cooled until lukewarm add the yeast soaked in the cup of water and the white flour. Beat until it is a smooth batter; cover and set aside in a warm place until nine or ten o'clock, when the sponge should be porous and foamy. Now sift in the rye and whole-wheat flour. Turn the mixer three to five minutes, until a dough is formed; cover, and leave until morning. The temperature of the room should be about 70 degrees. In the morning divide into four loaves; let rise until doubled in bulk and bake.

BRAN MUFFINS

1 egg
2 cups sour milk
2½ cups flour
1½ cups bran
1 teaspoon soda
1 teaspoon baking powder
½ teaspoon salt
1 tablespoon melted shortening

Beat egg well and add sour milk. Mix soda, baking-powder, and salt with flour and sift into egg-and-milk mixture. Add bran and melted shortening and beat well. Bake in quick oven.

The above recipes have been submitted to the Food Administration and have received their approval.

Beekeeping as a Side Line

Grace Allen

DO you love definitions and derivations? and do you like to think about how words came to be, as they slowly answered to the need of expression of some persistent idea? Take the word "amateur." Define it, and you get, following one eminent lexicographer, "one versed in, or a lover of, any particular pursuit, art, or science, but not engaged in it professionally." Visualize its history and growth, and you see back into a misty long ago, when men first began to linger over their work with a passion for perfection. Gradually their number grew, and they were called lovers, work-lovers. Out of the Latin into the French, and on down the years into our own sturdy speech, the beautiful word came, and men who worked at a thing for the love of it instead of the profit in it were called amateurs—lovers.

But of late years this word has often fallen from its original high estate, and now it brings to many minds only the picture of a beginner, or a bungler, instead of a lover, or one well versed and skillful. That is a great pity, but it cannot be the word's fault. Is it that men today are less faithful lovers of work or art or science than in the old days when the word was born of so great a need? Are the avocations and side lines of today chosen and followed for the sake of the extra money they may yield instead of the satisfaction of soul they may bring? I know a woman of great wealth who has a well-lighted, practical little workshop on the third floor of her home. There she often spends hours at a time, with patient, skillful hands shaping precious but formless stones and metals into things of beauty. She is an amateur.

It comes to me this month that we side-line beekeepers have an avocation which might well make amateurs of us all if we will let it, for it touches so many things human hearts naturally love—swift wings and flowers and sunlit days, science, mystery, unanswered questions, and a limitless challenge for understanding and study and skill. Our skill may add profit to our pleasure, yet we will be amateurs still, so long as we love the work and are not engaged in it professionally.

If it should happen by accident that some one not a beekeeper at all should be reading this, he would not find me for one moment trying to persuade him to be one, because he would know much better than I what avocation he could love and become versed in. You see if you don't love it, you are apt not to become versed in it; and unless you become well versed in beekeeping, you will not make a good beekeeper. And these un-good beekeepers are a drag.

Side Line apiary owned by Sam Y. Jones, Hodgenville, Ky. Mr. Jones is an attorney, and he says he sees no reason why any professional man could not keep a few bees on his back lot without interference with his other business.

So what I am especially urging this month is study, improvement, skill. I don't care how good a beekeeper you are, nor how poor, you can be a better one. If there is any one at all who ought to keep bees right, it is we who have small yards, and who, for the most part anyway, keep bees partly for pleasure. We are the amateurs of the industry, the lovers of it. Let us live up to our name. And let us measure up to the first part of the definition as well as to the last.

Skill in this work can be attained by three methods, and no one of the three alone will suffice. We must read about bees, we must observe bees, we must work with bees. Read, observe, work — these three; but the greatest of these is work. No progressive man would ever neglect any one of them; no amateur could.

If you have an unoccupied hour one of these wonder days of autumn, go out and watch the bees at the entrances. Are they bringing in pollen? Are young bees playing? Are there many spread out over the alighting-board? What are they doing? Why? You may find, or you might have found a little earlier, as I did last June and this August, the bees of certain colonies tugging and pulling at one another, hopping around or climbing spears of grass. You will remember having read about the Isle of Wight disease, paralysis, the disappearing disease, and you will promptly begin reading more and observing more. Imagine your chagrin if Miss Iona Fowls should come looking over your yard and find your colonies affected, when you hadn't noticed it yourself! Or pick up a few bees and release them at arm's length in front of the hive. Do they fly, or drop to the ground? I picked up fifty-five in succession from one hive the other day, and less than ten of them flew. The others dropped, or fluttered, to the grass. Why? (That is not a rhetorical question. I don't know, but I wish I did.) In the middle of the night it occurred to me to wonder if they might be starving, tho I couldn't think why they should be. However, the next morning I went out in the rain with a bucket of honey to administer first aid; but as they had a reasonable amount of honey on hand, they didn't need it.

Then, no matter where you live, you will have to winter your bees. If you are just a beginner-amateur you will doubtless follow the custom of your neighbors. But you will find a world of printed testimony and instruction on the subject, and can put in some profitable hours studying the matter. Will it be better to winter outside, or in a cellar? If the latter, have you a cellar of the proper temperature and ventilation? If outside, will it be wiser to leave them as they are or pack them in winter cases? If in cases, how will you make them, or where buy them? And how about stores? And queens?

Surely it is very much worth while to study, observe, and work; study, observe, and work; for if you are ambitious these things will bring you success. If you are a true amateur they will bring you the skill you so deeply desire.

A "Yard" of Bees.—Photographed by E. M. Eshelman, Takoma Park, D. C.

"Don't extract the last drop and then feed sugar," page 693. And, what is equally important advice to some beekeepers, "Don't extract the last drop and then *fail* to feed sugar."

SURE ENOUGH AMATEURS

The lady who rendered the solo
Loves music thru and thru,
And I who rendered the beeswax
Am stuck on my job too!

BEGINNERS' LESSONS

H. H. Root

POSSIBLY some who expect to be beginners in beekeeping may wonder why I do not devote one lesson at least to the question of selling. This I do not consider necessary, for every beginner worthy of the name is enthusiastic. He reads bees, thinks bees, and—talk bees. It is this contagious enthusiasm that sells honey, and every beginner, without really being conscious of it, is really creating a market that will take more honey than he can produce for several years. The least of his worries is getting rid of his crop; what concerns him the most is in producing enough honey to supply the demand right at his own door. There are, however, a few "don'ts" that should be observed by every amateur honey salesman.

Don't sell your honey for less than the market price. Give it away to your friends if you want to, but don't hurt some other fellow's business by selling honey to any one for less than it is worth.

Don't sell to a grocer and then turn around and retail from house to house to the grocer's own customers, or at less than the grocer's price.

Don't peddle honey in a town without first finding out whether you can do so without a license.

Don't spend $5.00 in advertising when you have only a hundred pounds of honey to sell.

Don't sell honey that has a scum on the top. You may know that the scum is made up of bubbles of air, but it looks bad.

Don't ship your honey away if you can sell it locally at a much better price.

Don't sell honey locally if you can ship it at a much better price.

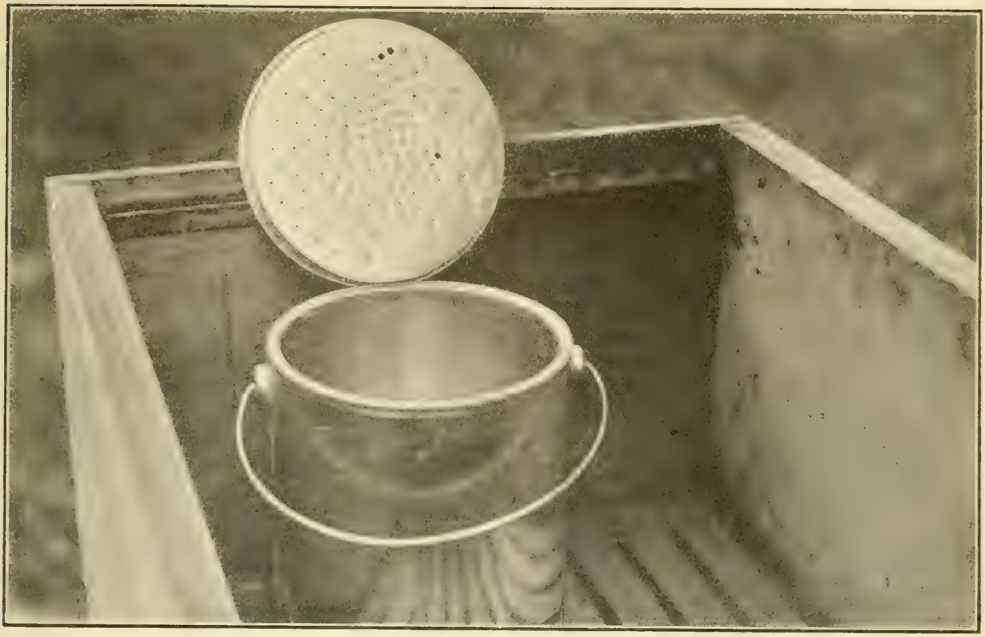
SUPPLYING WINTER STORES.

Most of the experienced and successful beekeepers unite in saying that supplying an abundance of good stores is by far the most important requisite for successful wintering. In a few localities that have no fall honey flow to keep up brood-rearing, feeding must be done in September to insure a good strong force of vigorous young bees before the cold weather comes on. A bushel of old worn-out bees would not come out a strong colony in the spring, no matter how favorable other conditions might be.

Early in October every colony should be looked over carefully to make sure there are enough stores. Paying no more attention to a colony after the first of September is rarely safe. Thirty-five to 40 lbs. of honey in the combs for strong colonies is none too much. Several years ago I was making an experiment in feeding back extracted honey to get some unfinished sections filled out and completed. Eight different colonies scattered about in one of our outyards were fed every day all the thinned honey that they would store. They finished up considerable comb honey and of course stored their brood-combs solid. The next spring our apiarist reported that there were some half dozen colonies that had gone away ahead of any of the others in the yard, and he suggested that it must be due to the queens. It turned out that these extra-strong colonies were the ones that had been fed so lavishly the fall before.

There have been scores of patents issued to beekeepers for various complicated feeders; in fact, several thousand dollars have been wasted in obtaining patents along this line. In the March 1st issue of GLEANINGS for 1915, J. L. Byer described on page 194 his plan of feeding, making use of five or ten pound friction-top pails, the lids being punched full of holes. I do not know whether the idea originated with Mr. Byer, but certain it is that this simple, inexpensive method of supplying winter stores has become very popular. The lids are punched full of 1-16th holes or finer from the inside so that the inner surface of the lid is smooth. These cans when filled with thick syrup (at least two parts of sugar to one of water) are turned upside down either directly over the top-bars of the brood-frames or over the hole in the escape-board or inner cover. If the lid fits tightly the syrup can not run out except as the bees take it, and be sure the lid does fit tight.

The pails themselves cost nothing, as they may be used later for shipping honey, the lids only being kept over from year to year. These extra lids are inexpensive, and take but a very small amount of room when they are stored away. Friction-top pails are being used more and more for honey. They are easy to fill, easy to handle, and the consumer after he empties the honey out has a pail that he can use. Best of all, no extra equipment is necessary for feeding. Many beekeepers succeed in producing honey in paying quantities and



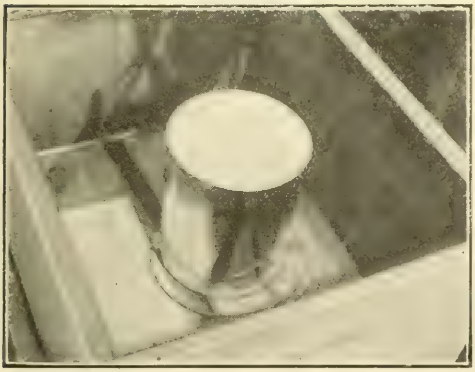
The 5 and 10 pound friction-top pails that are used so largely make the simplest and best kind of feeders for supplying winter stores. Punch the lid full of very fine holes, fill with syrup, about two parts of sugar to one of water (warm if weather is cool), and crowd the lid down tightly.

then fail because they spend too much in useless equipment.

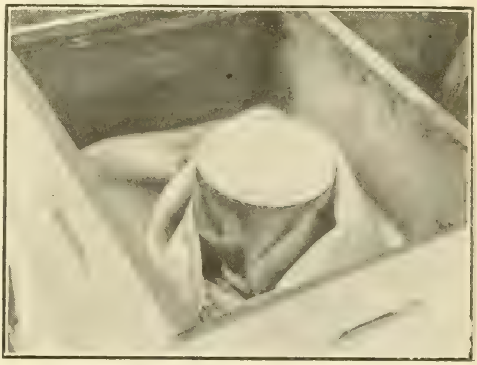
The syrup may be mixed at home and carried to the yard right in the pail used for feeding, or, if water is handy in the yard, the empty pails and the dry sugar may be taken and mixed right at the yard in an ordinary extractor.

It is beyond the province of these Lessons to discuss the comparative merits of sugar syrup and honey for winter stores. Because of the salts of iron, magnesia, etc., contained in honey there is no question but that honey is the best food for bees as well as for human beings. Furthermore, in most instances it is foolish to extract honey nicely sealed in the combs and then be obliged to feed syrup to take its place, for the difference in price of the two hardly compensates for the extra labor. Nevertheless we must not forget that many successful beekeepers feed syrup year after year and with the very best of results.

Details of winter packing in next lesson.



Invert the pail over the hole in the escape-board directly above the cluster in the brood-chamber. There is plenty of space to permit the bees to work over the whole surface of the lid.



Or, dispense with the escape-board altogether and put the pail directly on the top-bars of the brood-frames. Cover all around with an old sack. The syrup cannot run out any faster than the bees take it.

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

THE extremely hot summer, with nearly an entire lack of nectar in the sage districts, has made requeening almost out of the question. Most of my colonies have not been requeened, and there is little hope for requeening this fall, as conditions are about as bad for the work as could be imagined.

* * *

Comb-honey production is becoming less and less attractive as people become acquainted with the extracted. Personally I prefer the comb for my individual use; but I have a daughter who says she does not see any use " in chewing all that wax " and I guess she is about correct.

* * *

If the thoro drying-out of the sage is favorable for a future heavy flow of honey, we should have no fears on that line, for the hot weather of the past three months has given it a thoro drying without a doubt. The best flow I ever saw followed a season of extreme dryness, with little rain the previous winter.

* * *

The twelve-frame hive would be ideal for those beekeepers who are prone to extract too closely, from the fact that they come very much nearer to supplying winter needs by the extra size of the brood-chamber when the surplus chamber has been heavily drawn upon. This size of hive has many advantages any way; and were it not that they are so cumbersome to handle I should prefer them to the ten-frame size.

* * *

Some very disastrous grain and brush fires have recently occurred. Incendiary origin is given as the cause of at least a part of them. There is a class of people who believe they can best protest against war activities by destroying food materials. Such persons should be summarily dealt with. The fact that these very persons when caught are the first to claim protection of the laws they violate, leaves them but little sympathy from the public. A vast amount of damage has already been done to the pasturage by these fires, and it would almost seem advisable for the beekeepers to take some united action in bringing guilty parties to justice.

* * *

A shell fired from a gun will not travel so far in air heavily charged with moisture as in air containing very little moisture, which is due to the greater resistance of the heavier air. It is possible this same influence may have something to do with the distance bees will fly in different localities. It is well known that the air on the coast and mountain arid region is much lighter than that of the East. If it is true that bees fly further here than in the East, the lighter air may be the reason.

* * *

A colony of bees may be compared to an animal. When the animal is sleek and fat it is a comparatively easy task to keep it so with proper feeding. A colony once in a prosperous condition is more easily kept so by providing an abundance of stores to meet all requirements without skimping. I speak of this thinking especially of conditions that prevail in the sage districts where there is comparative inactivity during the summer months, and often until the following spring. I am satisfied that a large hive well filled with honey is in itself a factor in keeping up the strength of the colony. It requires more bees to protect a large hive and greater stores than it does a smaller hive with no stores to protect. Besides, a hive of larger proportions will allow comfort for a greater force of bees than a single section would for the same amount of bees. If the beekeeper wishes to prove this theory, take two colonies of equal strength at the close of the honey-flow. From one of these remove all supers, leaving only the brood-chamber for the colony. Give the other the brood-chamber and two extracting-supers well supplied with stores, much of which should be sealed. Honey sufficient for immediate requirements is not enough. Additional stores and extra bees to protect them are an incentive to heavier breeding. The condition of a queen may, of course, alter the situation to some extent; but I am supposing the colonies are in normal condition. My bees have gathered less than their requirements since the first of July, yet my strong colonies on which was left a large amount of stores are still prosperous. Those with less room and less stores have assumed a condition in proportion to the amount of bees required for the hive protection and no more. I conclude that the amount of stores available, together with the amount of bees required to protect such stores, furnishes the only incentive for breeding in the total absence of nectar.

IN TEXAS

F. B. Paddock, State Entomologist

A VERY important measure was adopted at the meeting of the State Beekeepers' Association held last August. A resolution was presented and adopted by the meeting to affiliate the Texas Beekeepers' Association with the Texas Honey Producers' Association. As the matter now stands, the Texas Beekeepers' Association of the past is the Educational Section of the Texas Honey Producers' Association, now affiliated with the Texas Farmers' Congress. Under this plan the Honey Producers' Association becomes the business section of the new association. The arguments presented in favor of this new affiliation were that, since the membership of the two associations was now almost identical, that since the honey-producers would have a program at Farmers' Congress next year, that since the two associations were now working for a common good, the improvement of the industry in the state, it would only be wise to unite and work as one association.

* * *

From a state-wide view point the honey and apiary conditions have improved during the past month. In several localities much needed rains have fallen, and in one locality too much rain is reported. Over the southwest section the drouth still prevails.

In the lower Rio Grande Valley the condition of the bees is above normal. Several of the fall honey-producing plants have come into bloom, and considerable honey is now coming in. The prospects for a fall crop of white honey are good. But little honey has been offered for sale, and this entirely for local trade. The price for extracted honey is 15 cents per pound.

In south Texas the condition of the bees is far below normal, but there is an improvement since the last report. The bees have plenty of honey in the brood-nest, and a small amount of surplus. None of this honey in the super will be taken, as it will be needed for the bees to build up on next spring. If good rains occur later there may be a fall flow of honey from white brush. No honey is offered for sale in this section.

In the southern part of the southwest section the condition of the bees is almost normal. The bees have filled the brood-chambers and have stored some surplus—in some localities enough to take off some for market. The source of this honey is cotton and mesquite. If there should be any fall flow of honey the bees will be in excellent condition to gather it. No honey has been offered for sale, and undoubtedly but little will be put on the market later. In the western part of this section of the state the condition of the bees is not over 40 per cent normal. Thruout the entire area there are no prospects for a fall flow of honey. Naturally no honey has been offered for sale in this locality.

In west-central Texas the condition of the bees is not more than 40 per cent normal. A short cotton flow is expected to yield enough honey to keep the bees from starving.

In the irrigated alfalfa areas of the extreme western section of the state the bees have done unusually well this season. Already large quantities of extracted honey have been taken, and only about three-fifths of the crop is harvested. Local prices for extracted honey prevail at 15 cents per pound.

In the eastern section the condition of the bees is normal, and prospects for a fall flow of honey are fair. Some honey has already been offered for sale on the local market at 15 cents per pound for extracted and 20 cents for bulk comb.

In central Texas the bees are only about 25 per cent normal. Unless fall rains occur there are no prospects for a fall flow of honey, which means that the bees will not even have the brood-chambers full of honey to go into the winter with. There has been no local honey offered for sale.

Conditions are somewhat better in north-central Texas, altho the bees have not fully recovered from the early summer drouth. Extracting is under way. But little honey has yet been offered for sale, the price being 15 cents per pound for extracted.

In northeastern Texas the bees are in excellent condition, and there are good prospects for a fall flow of honey. Extracting has just started. Extracted honey is selling in the local market for 15 cents per pound, altho but little has yet been offered.

* * *

The usual appeal is being made by Mr. T. P. Robinson, of Bartlett, the Superintendent of the Apiary Exhibit, for the beekeepers of the state to send exhibits to the Dallas State Fair. Mr. Robinson tells of the increased interest by visitors of the fair in the apiarian exhibit. He says the educational value of these exhibits is not fully realized by many beekeepers of the state. Too many are satisfied with a local demand for their honey crop at a figure far too low, when by united effort in getting the matter before the public the price could be raised to where it should be. Considering the price and food value, honey is today the cheapest food that can be purchased. It must be remembered that honey is not a luxury, to be indulged in as candy, but it is a necessary article of staple food. This year arrangements have been made with the Secretary of the Cotton Palace, held at Waco, to have an exhibit there. A premium list is prepared which should prove attractive to any beekeeper. The Cotton Palace is held after the Dallas State Fair, and many exhibitors prefer to show at both places.

* * *

The problem of combs melting down in the hives has been one of much concern to many beekeepers during the past summer. It is generally agreed that the past season has not been so much hotter than normal, and most of the beekeepers have come to the conclusion that the excessive melting down of combs in the hive was due to a much reduced colony. Those who reduced their colonies materially for the pound-package trade seem to feel that the combs melted down most in the weakest colonies. Some beekeepers who made a success of pound-package shipments doubted if they made money when the loss of the combs in the hive was taken into consideration. The matter of ventilating the hive is a simple one, altho different beekeepers vary the details of the process. Small blocks sawed from the common one-inch lumber serve very well for the purpose. These may be placed under the brood-chamber, under the super, or under the cover, in either case on the front side.

* * *

Mr. H. D. Murry has moved his bees from Mathis to Roxton, Texas. Mr. Murry believes that his new location will be more favorable for his queen-rearing business as well as for honey production.

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

As intimated in my last Notes, buckwheat at that time gave great promise of a good yield of honey, as the acreage was larger than usual, and the stand was in excellent condition. It started out well early in August, and for a while it looked like a good crop for the beekeeper, when suddenly the weather turned cool and remained that way right up till now, when last night, Sept. 10, we had a killing frost—quite a heavy one indeed for this date. Much of the later buckwheat will be injured so far as grain yield is concerned; but as no honey has come in for over two weeks it makes little difference to the bees.

However, there is a nice surplus on the hives, and the feeding problem will be simplified, which is worth something in a year like this with the high price of sugar at present. Just now the problem is, how are we going to get the buckwheat honey off the hives? The weather is so cool that the bees are stupid on the combs; and, even if combs were cleared of bees, the honey is as thick as taffy. With five apiaries, and nearly every colony having a full super, many of them two each, and a few with three supers of sealed honey, it is certainly going to be a job to get this honey off unless we get a big change in the weather soon.

The Crop Committee, in sending out their report, say that Ontario has an average crop of honey. The question I hear asked among beekeepers, wholesalers who handle honey, and retailers as well, is, "Where is this average crop? We should like to get some of it." Last week I was at one of the largest handlers of honey in Toronto, and at that date they had not bought a pound of extracted honey. The manager told me that he had an offer of 15,000 pounds at 15 cts. and asked my advice as to whether he should take a chance on it. Needless to say I refused to pass an opinion as to whether it was a good buy or not; for with wholesale and retail profits to be added it would make pretty dear honey for the consumer.

While there at this same place a deal was just closed with an eastern Ontario producer for 400 cases of comb honey, each case having 15 sections. While I do not know what they paid for it, yet I do know that they were offering it to the trade at $4.00 a case. That would mean that the retailer would have to get 35 cts. a section to have anything like a reasonable profit. Of course the comb-honey crop is extremely light; and the most of the crop, so far as No. 1 clover is concerned, is coming from the eastern part of the Province. This is also true of extracted, as I have seen very little honey produced west of Kingston this year that will grade as No. 1 clover. Certainly there is none in the counties adjacent to Toronto.

A lot of honey is being placed on the market this year which is no credit to the business, and cannot have anything but a bad effect on future sales of honey. A few days ago while at one of our large department stores I sampled honey in glass of this year's production that was as thin as syrup, and already fermenting. The manager told me it was from a western producer, but I did not ask his name. However, I have reason to believe there was no buckwheat in his locality; and if this was the case there was no excuse of putting such unripe honey on the market. Personally we extracted some honey this year that we were ashamed of. Fields of buckwheat were in full bloom; and with five yards we simply did not know what to do, as we naturally wished to get off some light honey before buckwheat started to yield; but at the same time, for some reason I cannot understand, the honey was thin, and the bees refused to cap it over. Suffice to say that a ton was taken off at one yard, and, as already intimated, we were sorry for it afterward. While it did not actually ferment, yet it was thin and had a peculiar acid taste to it that seems common to all the light honey I have tasted around here this year. I had many chances to sell it for local use, and could have sold it as well for store trade, but I would not place it on the market and have to dread hearing about it afterward. It was disposed of after furnishing a liberal sample to the dealer at a price considerably below what good honey should bring, with the understanding that it would go for baking and other like interests. But in future, buckwheat or no buckwheat, no green honey will be taken off if it possibly can be avoided, as it does not pay, no matter what view one takes of it, either in dollars or satisfaction.

On page 676, September, I am made to say that "I often work alone in the apiary, taking in honey and bringing back empty combs and accounting for 2500 or more pounds of honey in a day." This, of course, refers to the yard work only, as two were inside running the extractor and doing the uncapping. If not mistaken, the copy said, "I have often worked" instead of "I often work," for, let me whisper, as I get older and *lazier* I do not work alone in the yard any more during extracting, except at times when help is real scarce.

* * *

A good friend in Texas writes me lately of the terrible drouth they had in his section, and among other things says that he lost 300 colonies of bees and many nuclei—some loss, surely, and it made me think that, even if things were none too glowing here in Ontario this year from the beekeeper's standpoint, yet after all it might be much worse. While the crop is light, yet prices are good; and with the continued damp weather, in our section at least, the clover prospects are excellent for another year: and "prospects," as we all know, make up fully half of the beekeeper's expectations, and considerably more than that of his realizations."

* * *

Mr. Baldwin, page 706, September, refers in a cheerful way to the characteristic uncertainty of beekeeping, and advises us to "never say die" "until the white asters bid the closing year adieu." Just now the advice is particularly appropriate for "yours truly," for at this date the big apiary up north is much in need of winter stores. Acres and acres of asters and other fall flowers are in bloom, but unseasonably cool weather means no nectar. Here's hoping that old Sol comes to his own for the next two weeks, and that a big feeding-bill will be avoided.

FLORIDA SUNSHINE

E. G. Baldwin, Deland, Fla.

THE season in most of the state has been unusually poor, and the resulting condition tells on the colonies themselves, as well as on the output. In the high pine lands the partridge pea was in bloom in August, and reports showed that bees were gathering slowly from that source. They never gather very rapidly from this plant, but its long blooming period often results in a fair crop. Rains have been plentiful, thus far, and the yield ought to be good. While it is dark honey, it is still honey. Bees are in fair condition generally.

The appearance of American foul brood, on the East Coast, is a menace to that section. The aid of the Apicultural Department at Washington has been invoked to stamp out the pest promptly. It remains to be seen whether Dr. Phillips and his staff can find time to co-operate directly in the effort at this time. Never before did Florida so much need a state inspector as right now. Honey-flows on the East Coast are and have been almost a total failure thus far. Poor years are always worse than good yields to bring out any latent disease among the bees. Beemen are removing their bees from pine lands to swampy and hammock sections this summer to secure benefits of fall flowers when they come. All together, this year bids fair to be one of the worst in the history of the state.

* * *

During the early fall much care is needed all over the state to avoid loss of combs by moths. If colonies become weak, the ravages of the moth increase amazingly. Two weeks will utterly ruin a hive of combs if unguarded. If colonies are too weak to guard all combs, it is well to place a dummy in the hive and give surplus or excess combs to other stronger hives. If more combs are on hand than can be covered or guarded, it is well to place such in stacks of empty hives, and place a can of carbon-disulphide in the upper one. The sulphide needs to be placed in about every three weeks, unless combs are in moth-tight piles or stacks; then twice fumigating will suffice. We mean fumigating by fumes from the disulphide, above, not with sulphur, from below. The latter method is antiquated now.

THE BUTTERFLY WEED.

A correspondent sends us a beautiful clipping taken from the *National Geographic Magazine.* It shows the butterfly weed, and the appended article is as interesting as it is true to life. We had already seen the magazine—in fact, are a subscriber to it—but we thank the sender of this clipping just as heartily. We would refer all lovers of the beautiful to the columns of the magazine named. The artistic as well as the practical finds ample expression in the columns, and the illustrations are superb. Our correspondent, Mr. Edw. M. Barteau, of Brookhaven, N. Y., is a close observer of flowers and bees. He adds that he has never noticed that the bees carry away the little pollen-bags of the plant, stuck firmly to their legs. Many species of the milkweed, of which this is one (*Asclepias tuberosa*), do force the winged visitors to pay a toll by making them carry little bits of adhesive pollen-bags away from their blossoms after their visitations. The particular plant named is found as far south as Florida, but is not common in the state, nor does it seem to be a factor, so far as we can learn, in the honey crops of any portions of Florida. In Pennsylvania it is a common sight, cheering the waysides and dry ridges, making the autumnal landscape brighter for its orange-colored flare of beauty.

About half of those present at the Tennessee field meeting, Aug. 1, at the Davis queen yards, Spring Hill.

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

WE recently had the pleasure of a visit from Mr. Kennith Hawkins, when he passed thru here on his way to Washington from the southwest. Mr. Hawkins is doing extension work thruout the entire South, and has visited practically every southern state this summer, from North Carolina to Texas, giving instructive talks and demonstrations. He had many interesting experiences to relate.

Bruce Anderson, county agent for Forsyth County, has had very good success wintering in hives wrapped in paper.

Of course I made him talk wintering. He portrayed in glowing terms the strength and vigor of those colonies in Washington, when they came out of their packing-cases this spring. Plenty of early brood made them ready for the first early flows, whereas bees in that vicinity are usually unprepared to take advantage of them. I asked where that line was, that famous but elusive line dividing profitable winter packing from unprofitable. He said if I had to have a line, he believed it lay between that part of the country that had freezing weather and that which didn't, which classified me promptly.

John M. and Ben. G. Davis, the genial hosts of the Tennessee field meeting at Spring Hill.

I have regretted not being able to secure a more recent interview with Mr. C. E. Bartholomew, or a letter, for my article on wintering p. 753; but as he has been quite ill for some time, this has been impossible. We are all very sorry about this illness. He started into his work with much enthusiasm and earnestness. He certainly has all our best wishes for a speedy recovery.

The honey crop in middle Tennessee turned out to be even smaller than we estimated in the summer it would be. At that time we hoped for about a third of a normal crop. But there are many who got no surplus at all and some who will have to feed; and those who did take off a crop averaged probably less than 25 pounds. Local extracted is retailing at 20 cts. a pound in five and ten pound buckets, most producers around here retailing their own small crops.

Mountain apiary of a Dixie beekeeper, Mrs. Arnold Hunerwadel, Beersheba, Tenn. See page 702, September.

* * *

Things I Love

Hilltops wild and woodsy,
  Cliffs, and shining seas,
Tho better still I think I love
  Flashing wings of bees.

Sound of running waters,
  Wind among the trees,
Altho I think I love still more
  Murmuring of bees.

Mystery and wonder,
  Dreaming at my ease,
And, oh the mystery and dream
  That haunt a hive of bees!

Lines of singing magic
  (Lyric verses, please),
Yet who can say which I love more—
  Poetry or bees?

Our Neighbors' Fields

E. G. Baldwin

IN the July number, p. 547, reference was made to the appearance of the American type of foul brood on the East Coast. Subsequent verifications from Washington have proved that it is, beyond doubt, the American type, not the European. Apropos of the need developed for a good, efficient, and safe method of treatment, in view of the situation, the articles that treat personal experiences in fighting the pest make very interesting reading to all beemen situated on that coast. The article by J. Dundas Todd, *American Bee Journal,* p. 156, is timely and refreshing. It advocates burning the hives, bees, combs, and all, much as Dr. Miller has advocated in previous articles, when the number of infected colonies is small. Mr. Todd urges a roaring fire, sides of hole in the ground heated redhot, from a mass of glowing embers in the center, work after dusk, and sulphuring of the bees before operations begin. He burns hives and all. He can do ten hives in an evening, he declares. The editor of the *American Bee Journal,* in a footnote, urges saving the hives, then burning the insides with a torch, and destroying only the combs, bees, honey, and brood. It is the latter modified plan that we shall try to encourage in dealing with this disease on the East Coast; and we urgently advise all beemen, in the infected district, to examine all their colonies, and then treat heroically all that are found to be infected. Infectious diseases in the South are seldom as fatal or virulent as in the North. It is to be hoped that this may prove true of foul brood also.

* * *

Swarm prevention is the topic well handled by J. E. Crane, in *Domestic Beekeeper,* p. 253. The gist of the article is this: Begin early in season; start bees early in super by placing there combs with some brood in them. Remove the brood from the brood-chamber often, and place in above, giving combs or foundation below. Keep this up till signs of swarming are over, or the season warrants belief that no more danger of swarming exists—plenty of ventilation from first to last. The above is for extracted honey, of course. For comb honey, the treatment includes removal of brood early, at first signs of swarming, but then placing them on other (weaker) colonies, instead of in an upper story on the same hive; young vigorous queens, and shade and ventilation. [The article is well worth careful study. We have always found, in working for extracted honey, that it is a good plan to remove combs of brood from the lower chamber, and place them in the upper story or stories above an excluder. Be sure to "include the excluder." Otherwise nothing seems to be gained, for the bees consider the two stories as one. Mr. Crane emphasizes the excluder. Similar features are incorporated in an article by E. S. Miller, p. 266, same journal.—E. G. B.]

* * *

An extract from a speech delivered in the Senate of the United States by Hon. Chas. S. Thomas, of Colorado, entitled The Tariff, the Sugar Trust, and The War. We quote, p. 13:

"In my section of the country, Mr. President, sugar companies occupy a peculiar advantage. They have capitalized not only the tariff and capitalized the future in their common stock, but, as I directed the attention of the Senate two years ago, they have also capitalized inequalities in transportation rates, all of them working to the disadvantage of the consumers in the beet-producing region. There is a close and indissoluble connection between the great transportation companies of the United States and those huge industries which dominate almost every avenue of human effort and enterprise. Thru the conjunction of the control of big business with the control of transportation lines thruout the country, competition becomes an impossibility. Equal rights to the channels of trade for legitimate competition no longer exist." [Mr. Thomas here raises a vital question, and makes most far-reaching assertions. As my old professor used to say, "Interesting if true." Mr. Thomas claims to have the data to prove his assertions.—E. G. B.]

* * *

INTERCHANGEABLE BEEKEEPERS' SUPPLIES.

"Why cannot the different manufacturers of supplies get together and cut the rabbet of the hive body the same depth and width . . . . when the frames of the different makes will interchange with bodies of different manufacturers?" asks Ed. Townsend, in *Domestic Beekeeper,* p. 304. [We are approaching standardization in apiculture every year; but much yet remains to be done. The note sounded here is timely.—E. G. B.]

GLEANED BY ASKING

E. R. Root

C. M. T., Georgia.—1. On June 5, 1916, I introduced an Italian queen (ordered from a queen-breeder) to a colony of blacks. I looked for her in a few days and didn't find her then; but when I examined about a month later I found lots of Italians and plenty of brood. I looked again in about another month, and found what looked to be a black queen, altho I was not sure about it. Then before long I noticed that the Italians seemed to be decreasing instead of increasing; and now, a little over a year after introducing the queen, there are still quite a lot of Italians, but the majority of them are as black as I ever saw. As the drones hatched in this hive are black, I've decided that they must have allowed a black queen to emerge from a cell started when I introduced the other queen, and destroy her. Do you think this is right? If so, why did they accept her and then allow another hatch to destroy her?

2. In this locality, where bees fly practically every day thruout the winter, do you think it would do any harm to leave the shallow extracting-supers on the hives during the winter? Would the bees cluster in them with no brood in them?

3. My ten-frame hives measure 14¾ inches, inside. If I take out one frame and leave only nine, would they be spaced too far apart? Even if it didn't reduce swarming, wouldn't it make the frames easier to manipulate?

A. 1. Your theory about the young virgin of a former mother supplanting the introduced queen is probably correct. It very often happens that when a queen is introduced the cells that may have started in the meantime will be allowed to develop and hatch out a virgin. If she, by good fortune, is able to elude the old queen while she is young and weak she will later on be more than a match for the older queen and may kill her. This is what probably happened to the Italian queen that you introduced.

It is hardly possible that the Italians which you found in the hive a year afterward were the daughters of the Italian queen that you introduced. Bees get mixed more or less, going from one hive to another. If your black colony was near an Italian colony, or even if it was quite remote from one or more Italian colonies, you would be almost sure to find some Italian bees among your blacks and some blacks among your Italians.

2. We would advise you to leave on the extracting-super, but take out the frames and fill it with packing material. In the South it would be a great advantage to have top protection.

3. Fourteen and three-quarter inches for nine frames would be a little wide—little more than 1½ inches; 1½ inches from center to center is supposed to be the limit of good practice in the spacing of frames; 1⅝ or 1¾ from center to center will do very well in the production of extracted honey when the combs are shaved down afterward by the uncapping-knife.

A. E. A., Michigan.—Which is the better honey-plant—white clover or alsike?

A. Acre for acre, alsike is far superior to white clover. One field of 20 acres of alsike will take care of an apiary of 50 colonies very nicely, providing there is white clover in the locality to back it up. We have observed over and over again that yards in the immediate vicinity of fields of alsike clover will yield much more honey per colony than those yards having only white clover and a great abundance of it.

T. W. B., Pennsylvania.—A fruit-peddler driving by my place claims that my bees stung his horse on the common highway, that the horse became unmanageable to the extent that the fruit was scattered up and down the road. He claims damages, and says that if I do not settle he will bring suit.

A. If you can show that this was the first account of any horse being stung, and can prove by reliable witnesses who have been in the habit of going by your place that their horses or teams have never been stung, the fruit-peddler could not recover damages. If the peddler can show that you were negligent or careless when his horse was stung, then he might get a judgment in his favor. In any event, the amount would not exceed the value of the fruit plus the damage, if any, to the rig. Cases like this have come up before, and the courts have held that bees are not a nuisance per se; that moreover they are useful to man, and as such their owners cannot be held liable for occasional occurrences like the one mentioned, provided, of course, the owners were not negligent or careless when the accident occurred.

S. T. G., Ohio.—During this year I notice that cherries are much more abundant near the bees in a large eight or ten acre cherry-orchard than on those trees more remote.

A. During some seasons the increase in the amount of fruit in the immediate vicinity of the bees is apparent. When the spring is backward and cold at the very time the trees are in bloom, bees will not go further than is absolutely necessary, and will visit only those trees near at hand, and particularly on the leeward side where the wind does not strike the trees. It has been demonstrated over and over again that a tree fully pollinated, whether cherries or anything else, will stand wind or cold better than a tree not pollinated; hence it has come to be more and more the practice to scatter the bees over the entire orchard instead of putting them in one concentrated lot in the center of the orchard.

H. C. T., New Hampshire.—For winter feeding, which is better—an inside or outside entrance feeder?

A. If the weather is cold, the inside feeder is preferable, altho not so handy. The Boardman-Mason jar entrance feeder may be used, however, until freezing weather, provided the weather is warm enough during the middle hours of the day so the bees can take in the syrup. If the weather is quite cold it is advisable to have the syrup heated as hot as one can bear the hand in.

J. E. M., White Cloud, Kansas.—Will you please tell me why some of the three-banded Italians in a colony are so dark and some so yellow?

A. There are some queens which do not breed true. Some of them will show quite light-colored Italians, and some will show darker ones. It is possible the queen was crossed with a yellow drone. Some of the bees may take after the father, some after the mother. The same peculiarity occurs in many animals as well as among bees.

C. H. H., Wisconsin.—What have I to do to have my extracting-combs go thru the winter alright? Should they be cleaned by the bees, or left just as they come from the extractor?

A. If the combs are left sticky after extracting, there is greater danger of their becoming infested with moths and also a chance that honey may granulate in the cells. It is a good plan to have the bees clean out the combs. The easiest way is to stack them in piles as high as one's head, leaving a small opening at the top and bottom of the pile. A bottom-board may be placed underneath to catch the small particles of wax that will accumulate there. However, it would be rather risky to employ this method if there chanced to be any diseased bees in the locality. In that case, we would advise putting the supers directly on the hives, four or five supers to a colony, the supers being separated from the bees by an escape-board, with the escape removed and the hole contracted to a space large enough for only a bee or two to pass thru at one time. With this arrangement, the bees think the honey does not belong to them, and therefore proceed to clean it out, carrying it to the brood-chamber below.

J. K. D., Ohio.—Will white clover yield honey every season? Some years I remember when there was very little white clover, and yet there was a good deal of white-clover honey. At other seasons I have noticed that fields were white with it, but not very much nectar in it.

A. When it rains almost every day, white clover while in full bloom may and probably will have a little nectar. The white needs a great deal of moisture, but the wetting down should come in intervals of at least a week apart. If white clover is out in heavy bloom by reason of heavy rains almost every day, it probably will not yield unless there is a prolonged spell of hot weather of at least a week or ten days without rain, at the end of which time there must be rain or the flow will be over.

M. A. C., Wisconsin.—I have a lot of wooden feeders, and some of them leak. What is the best way to make them tight?

A. They can be coated on the inside with hot paraffine or beeswax—preferably the former, as it is much cheaper. They can also be painted on the inside with white lead. Unused feeders should always be stored in a dry place after using. If left outdoors they will soon be rendered useless, and even paraffine may not make them perfectly tight.

I. S. B., Maine.—Some years ago I used to hear a good deal about the importance of spacing combs wider apart during winter than the regular distance used in summer. Why don't I hear anything about it now?

A. It was found that bees winter well on summer spacing. There was no proof that the wider spacing resulted in better wintering. The question of whether the combs should be spaced, either summer or winter, 1⅜ or 1½ inches from center to center is not fully decided. Bees winter well both ways, and probably there is no difference. At all events, there was no gain in spacing the combs 1¾ and even 2 inches apart.

P. L. W., Pennsylvania.—Is it possible to make a sugar syrup at an outyard and feed it to the bees direct? What I am trying to do is to avoid carrying the water. I have an outyard located near a stream, and I do not wish to carry any more than I actually have to. Will you explain how I can make the syrup?

A. You can make the syrup by using a galvanized iron wash-tub, and setting it up on three bricks or stones. Fill it one-third full of water, and then build a fire under the tub. In the mean time put on the feeders. In the course of half an hour the water will be hot enough so you can stir in the sugar, which should ordinarily, for feeding, be in the proportion of two of sugar to one of water. Syrup made out of doors this way should be made when the weather is too cold for the bees to fly to avoid robbing. Usually a cold morning can be selected, even as early as September in most localities in the North.

L. H. S. Iowa.—1. In case of ordinary uniting of bees the bees moved will go back to the old stand—at least the old ones will. Among other plans to prevent this you recommended a year ago uniting the colonies of one outyard with the weak ones of another yard. Do you still advocate the plan?

2. Where one has his bees all in one yard how would you recommend uniting the weak ones?

A. 1. The plan of uniting weak colonies from two separate yards we still consider to be most excellent. It prevents all returning, and makes good colonies to go into winter.

2. Where two colonies to be united are in the same yard side by side they can be put together very readily by placing all the bees and combs in one hive and removing the other. Where the two colonies are remote from each other, the process is not so simple. Dr. Miller recommends putting a single thickness sheet of newspaper between the two hives at the time the uniting is effected. As it will take several days for the bees to gnaw a hole thru, the bees get together very gradually; and after being confined they do not go back to the old stand to quite the extent that they do when the uniting is done without the paper. We have tried the plan lately, and it works very satisfactorily. But beginners should be cautioned about using the

newspaper plan during hot weather. Uniting should usually be deferred until a cold day comes—so cold that the bees cannot fly. If the weather continue cold for two or three days, all the better.

Some beekeepers make a narrow slit in the paper between the two hive-bodies. Others make a hole thru with a leadpencil, which the bees gradually enlarge.

Another plan of uniting that has worked very satisfactorily with us is to shake the bees of several nuclei all into one box. We have sometimes shaken a dozen nuclei into one hive-body containing a screen at the bottom and a screen on top. The bees are kept this way over night in a cool place. If the following morning is quite cold the bees are thoroly mixed up and then dipped up by the dipperful and distributed at the entrances of colonies that need bees. The general mix-up of so many different bees seems to have a tendency to break up the family spirit, making them, to all intents and purposes, a swarm. The plan is not as simple as the newspaper scheme, but is to be preferred when there is a large number of weak nuclei to be united.

C. J. W., New Jersey.—My bees have gathered a great deal of aster honey. I read somewhere that such honey is a very poor winter food. Would you advise me to extract and feed sugar syrup?

A. That depends. If the aster honey was gathered early, before it gets very cold, and is all capped over, there is not much danger of winter losses. But late-gathered aster honey left unsealed is liable to cause dysentery before spring; but it does not always do so. It should be remembered that dysentery is caused by two conditions—poor quality of stores and too much cold. The latter condition can be corrected by having a colony very strong or the hive well packed, so that the bees are not subjected to extremes of temperature. But even when the hives are packed, unsealed aster honey may cause trouble before spring.

If we found unsealed aster honey we would remove the combs containing it and substitute those with other stores sealed over. Of course one can remove the aster stores and feed sugar syrup composed of 2½ parts of sugar to one of water, if he does not have combs of sealed stores.

A. L. C., New York.—My business is such that I was unable to begin extracting from my hives until the first of September. If it had been possible I would have extracted immediately after the honey-flow in July. Did I lose much by extracting on the first of September?

A. If the honey was left on the hives until the first of September considerable of it may have been carried below into the brood-nest. But this extra honey must have kept breeding up to a good point, and left nice colonies for winter. One objection to leaving honey on the hives is that some fall honey may be mixed with light. Moreover, the honey when extracted may have a pollen taste, especially if it is in old combs containing a little pollen. It is advisable to extract either during a honey-flow or very soon after, to get a first quality of honey. It is a good and safe rule to extract only from sealed cells, altho there are times when extracting can be done when only two-thirds of the cells are sealed.

C. G. G., Wisconsin.—American foul brood has developed in three of my colonies this fall. Shall I treat by the shaking plan now or do the work next spring?

A. It is a little late to shake and feed up. We would advise taking out combs that contain the foul brood and substituting combs of honey from other hives. Then you had better treat by the shake plan next spring. Combs that contain foul brood should be either melted or burned up.

G. H. W., Ohio.—In feeding during late October or early November, will it do to use the syrup half water and half sugar?

A. It could be so used; but it is much better to use a syrup two of sugar to one of water. It may be advisable to make it 2½ of sugar to one of water. The syrup should be thoroly heated and the sugar dissolved when it is 2½ to one. When as thick as this it is advisable to use a little vinegar or a little honey to prevent granulation. But be sure the honey is free from disease.

J. L. H., Indiana.—We used to hear a great deal about sub-earth ventilators for bee-cellars; but lately I have seen nothing in the bee-journals about it. Why is this?

A. Some years ago sub-earth ventilators were discussed considerably in the bee-journals, and great claims were made for them. They were nothing more nor less than six-inch glazed tile laid in the ground at the bottom of the cellar, and gradually rising to a point three or four hundred feet from the cellar until they came to the surface. The argument was made that the air would be warmer in its downward passage; and if there was a ventilator connected with a house chimney fresh air would be sucked into the cellar. Under these conditions the ventilation was good, and sub-earth ventilators served a useful purpose; but a sub-earth ventilator without a chimney or pipe running up thru the roof of the building is not of much use; and even then the chimney should be hot in order to create a draft. The ordinary chimney that goes into the cellar, and which takes care of a stove in a room above, will furnish a good upward draft.

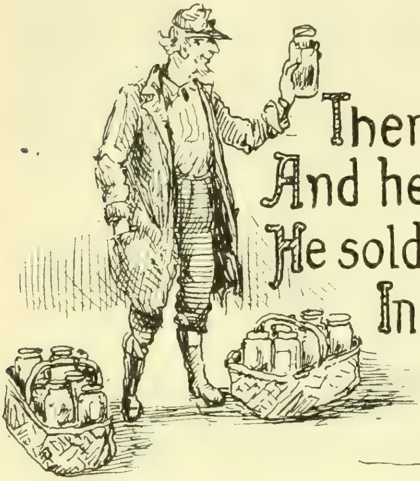
Many cellars nowadays have furnaces in them. If the bee-room joins the furnace-room, with a door that can be opened or closed, excellent ventilation will be secured. The opening of one window in the bee-room will let fresh air in. This window should be so blinded that the air can enter but shut off the light.

F. H. R., Wisconsin.—Does the use of queen-excluders interfere with the bees storing honey in supers?

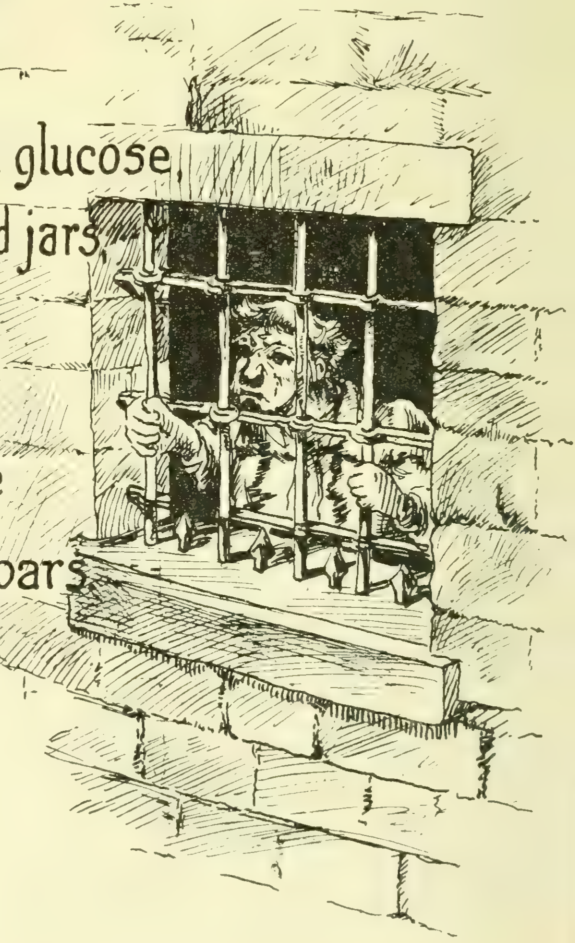
A. Those who use them extensively say not. There is no reason why they should make any difference if properly made.

Mother Bee NURSERY RHYMES

By M.G.P. (Mother Goose Plagiarized.)



There was a crooked man,
And he had a crooked smile,
He sold some crooked honey,
In a very crooked style.



He put some crooked glucose,
In some pretty crooked jars,

And now he lives
his crooked life
Behind big iron bars.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Furnace-Heated Cellar For Wintering Bees

I should like to have Dr. Miller give a detailed description of the wintering of his bees in his furnace-heated cellar, with special reference to area of ventilation of hives, temperature of cellar, amount of stores consumed, and ventilation of cellar. Are his bees as quiet now as before he put in his furnace? How much more stores do they consume than they did before? I have read his ''Forty Years among the Bees,'' in which he stated he was having trouble with bees starving, but have noticed in Stray Straws that he has referred quite often to his success with furnace wintering.

We are wintering 60 colonies in the cellar under our home, and expect to put in a furnace next year and enlarge the cellar so as to keep more bees. We always wait until first snow or freezing weather before putting in the bees, as they become very much excited if put in while it is still warm. We have regular ten-frame L. frames, and the winter entrance is the width of the hive by 1⅞ inches high. When there is snow on ground we use a sled to draw the bees from the yard to the cellar, about 50 yards. If they fly out from jarring, we throw loose snow over the entrance to close it up. When in the cellar it soon melts out. We run for both comb and extracted. This year is the best we ever had. Our average surplus is 104 lbs. per colony. F. M. Babcock.

Fredonia, N. Y.

Replying to these inquiries, I may say that further experience only confirms my liking for a furnace in the cellar. It is true that the problem now is to keep the cellar cool enough, whereas formerly, without the furnace, it was hard to keep it warm enough. But by opening doors and window there is little trouble in cooling off, with the very important advantage that the cellar is constantly filled with pure air—a matter that is of very great importance. Sometimes the thermometer goes up to 60°, and sometimes it may go below 40, but usually it is not far from 50°. By giving closer attention I could avoid such wide variation, but I'm not sure it would be worth the trouble. The point is that the air in the cellar is so much warmer than the outdoor air that the cooler and purer air is always crowding in, and I think purity of air is more important than temperature. The winter of 1916-7 was so very cold that most of the time the cellar was kept closed, and I paid very little attention to it, hardly looking at the thermometer once in two weeks.

Of course there is trouble when a warm spell comes toward spring, and the air in the cellar and outdoors is of the same temperature. The air outside and inside being balanced, there is nothing to make ventilation; the air in the cellar becomes foul, and the bees become uneasy. But that same thing happens in warm spells, furnace or no furnace. The only thing to be done then is to open up to the widest at night, so as to change the air in spite of the stillness.

As I have already said, more stores must be given since the furnace is in the cellar. I'm not sure that there is such a great difference between the total amount of stores used now and formerly; but for some reason there will be a colony here and there that will consume much more than the average, and to make sure that these have enough the whole must be more heavily fed. Each colony should have at least 30 pounds of honey, and more does no hurt.

Give pure food and pure air, and I suspect temperature is a secondary affair. Only the nearer to somewhere about 50 degrees, the less consumption of stores. C. C. Miller.

Unwise to Let Honey Candy in Large Tank

The great bane of the extracted-honey man is too little honey in the brood-nest. I have been testing a few colonies leaving them for the winter with a half-depth super of extracting-frames. So far it has worked well. This winter all are like this. It is a very easy way of wintering, and does away with all feeding, either in fall or spring. If the colony is protected properly, and very strong, it seems all right.

Now I have another kink that would have been worth money to me had I known it years ago. I used to let my honey candy in almost anything. My honey-tank holds 1600 lbs., and I have had it full of candied honey several times. It's almost all it is worth to get the honey out. This winter I had several thousand pounds I knew would candy; but I have put it in common lard-cans which hold about 65 lbs. I have a boiler just right for two, on the back of the range, and it costs me nothing to remelt it in 24 hours. I know honey-cans will do, but they are short-lived. I have cans that have been used for eight years. The bottoms are painted, and the inside is wiped with a greasy cloth when putting away.

My bees averaged about 400 lbs. of extracted honey per colony the past year. Most of the crop I have disposed of at home. The rest was sent to distant customers.

Marceline, Mo. Irving E. Long.

Successfully Wintered in Cellar Above Ground

Last fall I had a small out-apiary of 17 swarms three and a half miles from home. Dreading the trouble of moving them, I decided to winter them in the cellar of the house where I did my extracting. This cellar was above ground, but double-walled and banked with clover straw. It was 10 x 10 x 6 ft., single floor, and tar paper for windows.

I put in the bees about Dec. 15, and the temperature was 45 degrees. Dec. 26 it was 32 degrees; and until March 20 it varied from 25 to 28 degrees most of the time. Fifteen of the colonies were strong, and all wintered except the weakest one, which died of starvation, not having one drop of honey left in the combs. Jan. 25 the entrances on all hives were closed with ice from the moisture which had accumulated inside. They had metal covers with inner covers and bee-escapes. So I gave each a ¾-inch hole in the hand-hole. They remained as quiet as could be expected, and did not freeze. Later in March three showed signs of dysentery and were a little uneasy at the approach of a candle. April 1 they were set out. Two weeks later most of the colonies covered six combs; and, altho there was a strong wind and freezing weather, they stood it first rate.

The middle of March I opened the cellar window on the south side and cut an eight-inch hole into the inside. This was open day and night till now the inside walls and tar paper on the window have a crust of ice about ¼ inch thick. Where could it have come from?

On the whole, they wintered better than those wintered in my home cellar where the temperature is mostly 45 degrees. This coming winter I shall winter about 30 swarms in the same cellar. In seven years wintering in cellars and outside I have lost but one swarm and that was the one that starved. C. H. J. Baumbach.

Fall Creek, Wis.

Quadruple or Double Cases for Wintering? In recent issues I have noticed some reports of trouble in wintering in quadruple cases. I am glad that I am not alone in seeing faults in that style of wintering. There is one part of my apiary in which I cannot winter successfully in quadruple cases especially if they face east and west. Just why it is worse in that particular part I do not know, as the conditions are much the same, only perhaps the ground is a little lower. Last winter I tried facing them north and south, and they did better; but I notice in the spring when I put supers on the strongest colonies that it is the same all over the yard—the south colonies have the supers. I have a number of double cases facing south, and have lost only one colony yet by dwindling. My two single cases facing south have never given me any trouble, so I naturally conclude that single cases facing south are the best; but for economy's sake I am making double cases of three-eighths matched lumber. There is quite an advantage in having either single or double cases all face the same way, especially if the bees are cross, for it prevents the necessity of passing between entrances of colonies that are too close. Two years ago I purchased two supposedly pure Italian queens and proceeded to requeen my yard of 120 colonies. The queens were prolific and their progeny were good honey-gatherers; but when they joined themselves to an apiarist it was a case of "till death us do part." I believe in cases like this it is quite an advantage to have colonies face one way, and the further apart the better. Thomas Martin.

Wanstead, Ont., Canada.

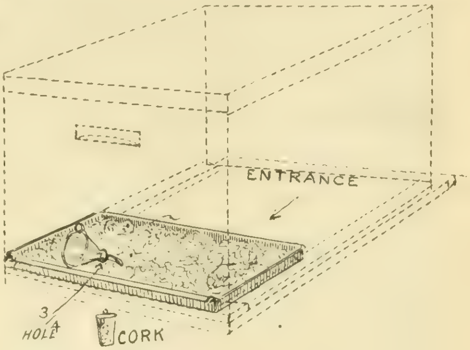
Thirty colonies in old style double walled hives loaded on the Root Company's Reo truck—a good load for a ton truck.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Powell's Floor-Board Tin-Tray Feeder Before a honey-flow comes on bees do not anticipate the approaching need for a strong force of workers, but they wait until the flow actually begins before the queen becomes active, and generally the flow has ceased before the young bees are ready for work. The colonies do not get the full advantage of the flow because of the lack of workers; on the other hand, there is an increased lot of bees to consume the honey gathered, and nothing useful for them to do. The beekeeper who knows when to expect a flow will begin feeding four to six weeks before, if there is that much time between flows, or will feed enough to keep up brood-rearing between flows that are not so far apart. Last fall, or during the late summer, I discovered one hive absolutely without stores and turning out young bees as fast as they were hatched. Seeing apparently perfect young bees running away from the hive caused me to investigate, and I discovered that they were without stores. I immediately began feeding. The fall flow was just sufficient to enable the bees ready for it to "stock up" for winter. Two months later I discovered that the hive I had fed was nearly twice as heavy as any of the others, and it was in the poorest condition at first. The timely feeding did it.

My feeder is a square tin pan made ¾ inch deep, the full width of bottom-board. Across the back side is a quarter-inch "lip" which slides under the back of the hive to prevent syrup from running back behind the pan and getting under it, wasting the syrup and messing up things. I bore a ¾-inch hole thru the back of the hive and am ready for business. In any kind of weather, day or night, I go to a hive, remove the cork from the hole, insert a funnel and pour in as much syrup as I want. After inserting the cork the bees of other colonies are ignorant of what is going on. There is not a particle of waste, as I fill the pan with wood excelsior which holds up the bees, keeps them from falling into the syrup, and enables them to get at every particle of feed. The pan can be slipped out or in from the front. The inside edge of the back of the bottom-board should be beveled and the lip of the pan bent to fit the bevel. C. W. Powell.

Joplin, Mo.



* * *

Carbon-disulphide to Fumigate Comb Honey Will you please inform me if comb honey can be well fumigated for wax-moths when piled in stacks ten supers high and well wrapped in blankets to confine the fumes? I would also like to know the amount of carbon-disulphide that should be used for ten Danzenbaker supers.

Clarkson, N. Y. Frank H. DeGraff.

[Ordinarily we do not fumigate as many as ten supers at a time, altho we do not

The same hives located on separate stands after the move.

HEADS OF GRAIN FROM DIFFERENT FIELDS

know that there would be any objection to it provided you had everything tight so the gas could not escape. It might be necessary to paste paper over the cracks to make sure.

The higher the temperature the greater the difficulty in obtaining complete saturation. In other words, more of the liquid carbon disulphide is needed at a high temperature than at a low temperature. To saturate 1000 cubic feet of air at 50 degrees Fahrenheit requires 53 5/10 pounds of liquid carbon disulphide; at 68 degrees, 77 6/10 pounds, according to figures given in Farmers' Bulletin No. 799 of the U. S. Department of Agriculture. Therefore 10 cubic feet of space requires at 70 degrees about ¾ of a pound of carbon disulphide for complete saturation; and to make sure that the eggs as well as the larvæ of the moths are killed the exposure should be not less than twelve hours. A ten-frame comb-honey super contains nearly a cubic foot of space; but the honey occupies a large proportion of that space, so it would be safe to assume that a quarter of a pound is sufficient for ten supers.

There is little danger to a human being in getting an occasional whiff of the gas, altho if one were in a room where the gas were very rich there would be danger. When merely working around stacks of supers with a dish of carbon disulphide on top the danger is practically negligible.

Remember that this liquid is inflammable, and that just as much care is necessary in handling it around a fire as in handling gasoline.—Ed.]

* * *

Packing-Cases Little Used in Maryland Mrs. Allen's discussion of the wintering problem is very interesting. Of course our winters here (Baltimore Co.) are very much more severe than in Tennessee; nevertheless, a packing-case is never seen in this locality. My own experience has not been very extensive; but Mr. James merely puts on a super of leaves or chaff, and wraps the most exposed hives with tar paper. I know Dr. Phillips advises against black paper in winter; but I'm not sure the results justify the advice. Last winter was unusually cold, with high winds, but Mr. James' two yards of about 160 colonies came thru with only one gone, and that was lost because of clogged entrance. The rest were strong in bees and general vigor, and went right to work.

One point in this method is important, especially when the hives are not wrapped, and that is, to put the super on in time for the bees to seal it to the hive body before cold weather. Another wrinkle which I believe is a big help is to cover the brood-frames with a piece of enameled oilcloth, common table oilcloth, a little smaller than the entire surface of the tops of the frames, first placing sticks across to give the bees a passage from frame to frame. The chaff, or whatever filler is used, is put in a sack or other container and pushed down on the cloth. Of course the enamel is placed next to the bees.

This isn't exactly in line with the absorbent theory, for the moisture condenses on the cloth and runs down to the bottom of the hive, but the combs will be brighter and the chaff dryer than when no cloth is used. When the packing is placed directly next to and above the bees, all the moisture is held by absorption except what evaporates from above. In a natural cavity the bees propolize the ceiling of their home, and whatever moisture arises condenses and runs down and out at the entrance. When we put an enameled cloth above the frames we duplicate the natural condition, and we have the same warmth preserved by the packing material. C. W. Marshall.

Baldwin, Md.

* * *

Bees Left All Year in Single Winter Case Enclosed you will find a picture of my chaff hives. I put one hive in each one of these winter cases and let them stay there all summer. The packing is left around them, also in summer. Working on the Doolittle plan I would exchange frames instead of hives. This winter case is made large enough to accommodate one brood-chamber and two or three supers, or three brood-chambers of the Massie type for extracted honey, or two brood-chambers of the Langstroth style. The entrance and bottom-board are better than any other kind I have ever seen. There is a wooden slide to keep out mice in winter.

Highland, N. Y. Victor G. Berrian.

Berrian's winter case left on the year round.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Caged Bees and Queen Murdered by Ants. I ordered some young queens to replace some that were lost in swarming. The queens arrived o. k. Two were placed in the hives at once. I placed one queen-cage containing the queen and bees on my writing-desk in my house.

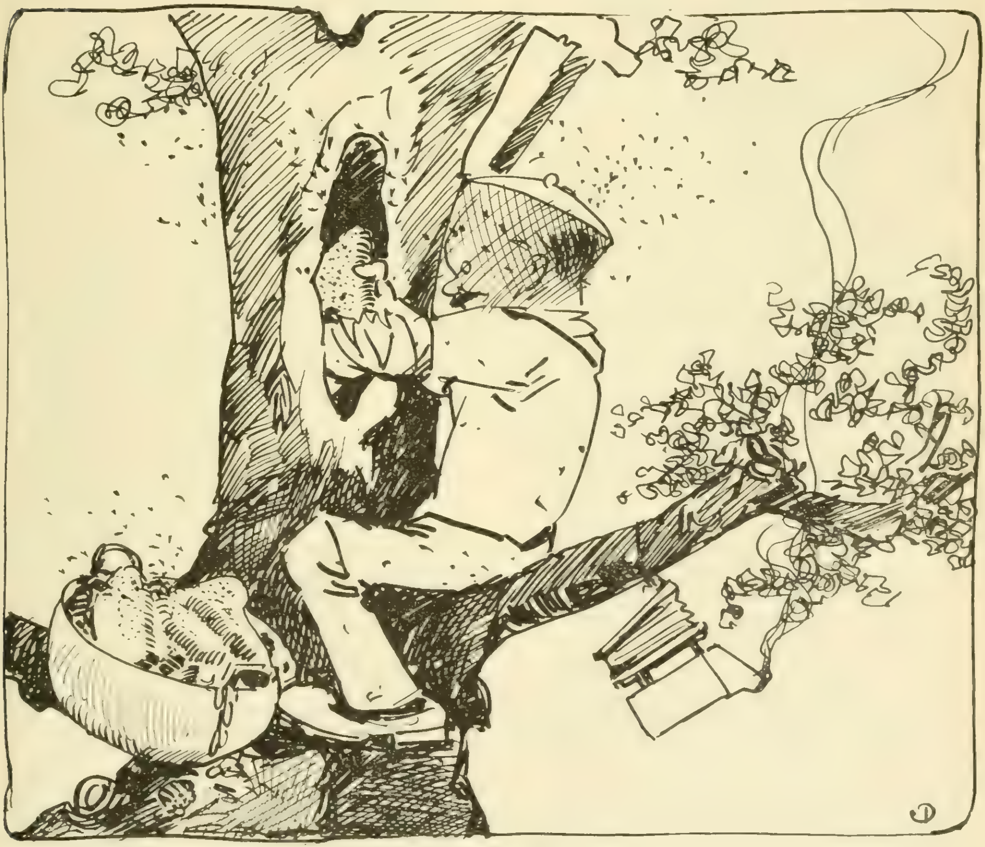
The next morning the queen-cage was completely alive with tiny ants! They were so small that they could hardly be seen with the naked eye. The ants do not bother sweets, neither do they work at daylight. But they seem to come from nowhere, and by the millions. I placed the empty cage back among the ants, but not one would stay on the cage or the bee food. I then placed the dead bees beside the cage and the ants piled on them by the hundreds. Grease is what they like, and I am sure now that they like bees. W. H. Worden.

Brookings, S. D.

Combs of Unsealed Honey; Are They Fit to Extract? Please tell me what to do with extracting-frames about half full of honey. This is my first year's experience with extracted honey, and a very poor season too. I have so many frames about half full I thought there might be a way I could give them to one hive and get it in the frames sealed up so it can be extracted. Selah M. Shuey.

Germantown, O.

[If unsealed honey is left on the hives long enough it will become thick and well ripened. We have often extracted much honey and found no difference in body or flavor. Some beekeepers do feed back honey in order to get their sections finished; but for extracted honey that has remained on the hives as long as yours we see no object in all this extra labor.—Ed.]



THE BACK-LOT BUZZER

BY J. H. DONAHEY.

The lineman, who tried to get the honey out of the big oak tree on Uncle Benny Sourweed's farm, said he was an expert at tree climbin', but he didn't know much about bees.

The Doctor says the swellin' will all be gone in about three days.

JUST NEWS

Editors

THE A. I. Root Co., in order to care better for its constantly increasing trade in the Middle West and West, has secured an interest in the Kretchmer Manufacturing Company at Council Bluffs, Iowa., and has taken over the conduct of that business, but under the present name of the Kretchmer Manufacturing Company. The geographical and shipping advantages of the Council Bluffs plant determined the Root company in undertaking part of its manufacture there rather than enlarging its home plant at Medina.

* * *

The fourth annual conference of the National Beekeepers' Association of New Zealand was held at Wellington, N. Z., on June 6, 7, 8, last. Prominent beekeepers from all parts of the state were present. New Zealand's secretary of agriculture, Mr. F. S. Pope, in opening proceedings said that the compulsory registration of all apiaries in the state would probably soon be brought about by law, and that the department of agriculture was likely soon to establish a queen-rearing apiary. A good deal of the attention of the conference was given to the question of aiding in the care of the apiaries of those who had been called to the front, and as to beekeeping as a livelihood for the maimed soldiers who might return from the battlefields of Europe. All possible aid was assured the beekeeper soldier and the maimed soldier who might become a beekeeper. Honey prices have materially advanced in New Zealand; the demand is excellent, and the conditions are promising for the coming summer season. The newly elected officers of the association are: President, W. E. Barker, Peel Forest; vice-president, H. W. Gilling, Hawera; secretary and treasurer, F. C. Barnes, Kati Kati; editor of New Zealand *Beekeepers' Journal,* F. C. Baines.

* * *

The Queensland (Australia) Beekeepers' Association is promoting " The Queensland Apiary Co-operative Company, Ltd." The capital stock is $100,000 divided into 20,000 shares of $5.00 each. The object of establishing this co-operative company in the State of Queensland is to establish suitable means for the marketing of honey on the co-operative principle. In the beginning this company proposes to confine its operations to the wholesale handling of honey and by-products, leaving the bottling and retail-package business to other operators. No application for less than five nor more than thirty-five shares of company stock will be entertained, and share-holders must become suppliers to the co-operative company within three years of registration, or otherwise their shares may be revoked. Indeed the Queensland Beekeepers' Association appears to be a very wide-awake organization, constantly looking toward the betterment of beekeepers and apicultural conditions in Australia.

* * *

Francis Jager, president of the National Beekeepers' Association, in the latter part of August received a commission from the United States Government as Deputy Commissioner to the head of the American Red Cross in Serbia, and sailed for Paris a few days after having received the appointment. As D. C. Polhemus, vice-president of the National, died last February, the only remaining executive officer of the association now on duty is the secretary, John C. Bull. Before leaving, with his usual keen interest in the welfare of beekeepers Mr. Jager expressed anxiety for the program of the next National meeting. He left all the National Association correspondence on file at the University Farm, St. Paul, Minn., in charge of Mr. France. He said that possibly he might return temporarily within a few months, and, if at all possible, on his way to Italy and Switzerland would bring with him some queens and other useful articles and information that he might gather on the journey. Just before leaving, Mr. Jager said to the editor of Gleanings, " Should you hear that we went down, I will die game like a beekeeper who received his last sting from a German submarine."

* * *

In an article recently appearing in the Minneapolis *Tribune,* and given still wider circulation by being copied into the New York *Herald* of Sept. 2, John Jager, superintendent of the bee-culture department of the Minnesota State Fair, strongly urges beekeeping for soldiers who may be disabled in the war. In this article Mr. Jager said: " While the annual honey crop of Minnesota is worth close to a million dollars, there is about nineteen times as much that goes to waste. That means that about $19,000,000 is wasted annually because that amount of honey is untaken. The reason for this tremendous waste in Minnesota is that there is a big shortage of beekeepers—there are not enough of them to harvest the possible honey crop." Mr. Jager suggests that the United States government provide its unfortunate soldiers, who become invalided in war service, a course of study in bee culture. He concludes his views by saying: "The Government should also give them the financial aid needed to start an apiary. Once started, they will be able to take care of themselves, as the profits are large."

* * *

The Ohio field meet, under the auspices of the Ohio State Beekeepers' Association, was held at Wilmington, Sept. 6 and 7, in the Walker memorial building. While some of the out-of-state speakers failed to appear, the attendance was fair and the interest excellent. On the morning of Sept. 7 the members were carried in automobiles around the surrounding country inspecting beeyards, stopping particularly at the yard of J. E. Vernard. Addresses were given before the meet by Mellville Hayes, A. C. Ames, of the Ohio Inspection Department, D. H. Morris, and E. R. Root. In the afternoon a talk by E. R. Root was given before citizens and pupils of the Wilmington schools on bees, making special reference to the important work they do in pollinating flowers. President Mellville Hayes, of Wilmington and Secretary Ernest Kohn, of Groverhill, are making large plans for the winter meet. The next field meet is to be held at Medina, where it was thought that exceptional opportunities can be given to beekeepers to learn the latest methods of management.

* * *

Mr. Morley Pettit, of the Ontario Agricultural College, Guelph, has resigned as Provincial Apiarist, and after Nov. 1, 1917, will devote his attention to the Pettit apiaries, with headquarters at Georgetown, Ont. Communications having to do with this office should be addressed to the Provincial Apiarist after the above date, so they may receive the attention of Mr. Pettit's successor, whoever he may be. Mr. Pettit says that it is with considerable regret that he retires from office, as the duties have been congenial and the relations with the beekeeping public most cordial; but he now feels that the production of honey offers a greater future, and is less exacting than the life of a civil servant.

* * *

The Food Administration at Washington has sent out an appeal to the housewives of the nation to save sugar, saying that Americans use twice as much sugar as any other people, and that this country's allies in Europe face a shortage for their real needs. The authorities ask people to use less candy, less sugar in tea and coffee, not to frost cakes, and—what is important to the beekeeping business — substitute honey wherever possible. A practical turn is given to this advice by giving a recipe for honey-drop cakes.

* * *

A postponed regular field meeting of the New Jersey Beekeepers' Association was held on Aug. 30 at the home of State Bee Inspector E. G. Carr, at New Egypt. There was an excellent attendance and lively interest. The features of the day's program were demonstrations given by Mr. Carr, both in inspection work and wax-rendering. It was voted to accept the invitation of the New Jersey State Agricultural Department to hold the annual meeting at the same time the State Department holds its annual at Trenton, in January.

* * *

A report is being circulated in some quarters that the United States Government is buying honey and paying 15 cts. a pound for the same. Dr. E. F. Phillips, Apiculturist, at Washington, D. C., informs GLEANINGS that he does not know of any branch of the United States Government that is buying honey. Nobody else does, either.

* * *

Mr. H. C. Cook, of the Keystone Apiary, Omaha, Neb., made an exhibit at the State Fair which achieved remarkable success. There were four fine exhibits made, but Mr. Cook succeeded in taking 14 first awards and 9 seconds, amounting to $170 in cash, and three silver trophy cups—one of them the grand championship cup with a $50 bill in it.

* * *

The annual meeting of the Northern Illinois and Southern Wisconsin Beekeepers' Association will be held in the court-house at Freeport, Ill., on Tuesday, Oct. 16, 1917. The secretary of this association is Mr. B. Kennedy, 2507 West State St., Rockford, Ill., of whom particulars may be learned by interested members.

* * *

A letter from M. C. Silsbee, dated Sept. 1, Cohocton, N. Y., says that their beehouse, mill, and total contents, were destroyed by fire the previous night with a loss of $5000, partly insured, and that all orders were burned, and they were left with no record of parties who had ordered supplies.

OUR HOMES

A. I. ROOT

Take no thought for the morrow.—Matt. 6:34.

Oh how I love thy law! it is my meditation all the day.—Psalm 119:97.

Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me.—Matt. 25:40.

ON Sunday afternoon, August 19, it was my privilege to listen to a lecture by Dr. Charles E. Barker, at our Medina Chautauqua. It was announced as a lecture; but just now I should call it one of the grandest and most helpful sermons I ever heard in my life. The subject was, "The finest of the fine arts." The speaker announced at the beginning that he was going to talk on happiness. First, he said happiness depends on obedience to law; and he suggested that the greater part of his audience had already found out that, whenever they told a lie, they felt unhappy—unhappy because they had *transgressed* a great *law*. Even a small child, sooner or later, becomes aware of this law. He then went on something as follows:

Most people get the idea that happiness consists of having plenty of money, riding around in automobiles, having nothing to do and plenty of people to wait on them. This is a great mistake. Happiness does not come that way. Every little while some millionaire commits suicide because his great possessions and wealth that he could not use and did not *need* only made him unhappy. I can say amen to the above. The good doctor told us frankly some of his own experience along that line. One of my daughters said it reminded her of your old friend A. I. Root, the way the doctor confessed some of his sins and shortcomings before that great audience. In some way it came about that he was personal physician to ex-President Taft at the time the latter occupied the presidential chair. Dr. Barker was enabled to give him advice that reduced his weight from 342 to 257 pounds. The president, out of gratitude, made him a present of quite a sum of money; and, more than that, several great millionaires who were clustered around our capital city seemed to decide it would be a great thing to have for *their* family physician the man chosen by the president.

Now, a family physician enjoys privileges in the family and in the home that are seldom accorded anybody else; and the good doctor assured us that the glimpses that he got behind the scenes satisfied him that great wealth, fine clothing, plenty of servants, *and nothing to do,* do *not* confer happiness.

At this stage of his talk he said he was going to give us five rules for being happy. Now, I greatly regret that it is out of my power to give to my readers a glimpse of the way in which he emphasized and enforced and "drove home" his five rules or recipes or secrets, if you choose, for being happy. If Billy Sunday has a greater faculty for driving home his truths and making every man, woman, and child in the audience "sit up and take notice," he is a greater man than I ever gave him credit for being.

Dr. Barker is original. He certainly never copies anybody. It is a wonderful and intense love for humanity—high, low, rich, or poor—that gives him such astonishing power and self-possession in his vehement talk and action. Now, this lecture lasted something like an hour; and it is hard for me in my old age to take in and hold so many exceedingly valuable points. But here comes in what was to me an unexpected help in my old age. One of my grandchildren, Wynne Boyden, the one whom I have mentioned as an "electrical expert," was present. By the way, he and I have of late been having some long talks on electricity, gardening, etc. By my years of experience I often help him in his work; but I think it oftener happens that he, at the age of 17, helps *me* by his ability to comprehend and keep in mind, things in a way that I, away past 70, cannot do; and when I happened to say Sunday evening, "Oh dear me! I am afraid I cannot remember all of those *five* points," he replied at once, "I can give them to you, grandfather." Then he got his pencil and a piece of paper and wrote down the following:

RULES FOR HAPPINESS.

1. Look on the bright side of things—don't worry—worry unfits the mind for the difficulties to be met.
2. Don't envy other people their positions in life; they are no better off than you. Neither money nor poverty can make happiness.
3. Put your whole soul into your work; it is the way to be happy. You may not be satisfied with your job; but while you do it, do it well.
4. Cultivate a kind and cheerful disposition, not merely in society and among strangers, but at home.

Be kind to husbands, wives, and children. The more happiness you give the more you receive.

5. Trust in God—*actually* trust in God as your Father. Don't be a Christian merely in name.

Remember that God knows best; and so if your prayer is not granted, *remember* that it is all for the best.

No. 1. The doctor said it took him years and *years* to become really master of this matter of worry and borrowing trouble. He said his good father was in the habit of having the "blues," and he had got it into his head that the trouble was inherited. Just as soon as he mentioned it, it occurred to me that *my* father also had spells of borrowing trouble, and sometimes making the whole family of seven children and the good mother feel blue likewise; but, thanks to a kind Providence, my mother, with her faith in her heavenly Father, could *always see sunshine.* In a most emphatic way the doctor declared there is a "silver lining" to every trouble; and the duty we owe to God and to our fellow-men is to keep holding up that bright side with a smiling face.

In regard to the text, "Take no thought for the morrow," the doctor said many good people seem to think this means that we should make no provision for our physical wants, and that "preparedness" is entirely out of place. Nothing of the kind. The Savior only meant that, after having done our level best, and after having asked him for our daily bread, we should forbear worrying or borrowing trouble. Do not cross bridges before you get to them. The whole spirit of the Bible from beginning to end teaches us that we should bestir ourselves and *work;* but after having done all this, *trust God,* and be happy. My old pastor, Rev. A. T. Reed, said we are enjoined against being *over-anxious*—to take a hopeful view of the future, and remember that it is a loving Father who holds even the winds in the hollow of his hand.

No. 2. Do not get the idea that other people are more favored than you are. You are probably just where God wants you to be. Then he told us of a celebrated picture that carried a lesson with it. It represented a simple landscape with a rude fence, not very high, across the middle of it. On each side of the fence was a donkey; but each donkey was represented as leaning over the low fence to pick grass *on the other side.* Do you see the moral, my good friends? Instead of being content these poor stupid beasts each imagined the grass over the fence was better, or that there was more of it, than in his own dooryard. The title of the picture was, "The Two Silly Asses." My good friend, look back over your life and ask yourself the question if you have not been at some former time, or if you are not just now, deserving the title given to the poor dumb brutes.

No. 3. If something worries you that you cannot get out of your mind, pitch into the work that lies before you. Do it with all your might. Put your whole mind and soul to the task that lies before you. Do not look over the fence. Do not covet your neighbor's job nor long for something easier, but stick to your knitting. It may seem a dull and disagreeable task for a while; but keep in mind that beautiful text, "Be not weary in well doing, for in due time we shall reap if we faint not."

Our Chautauqua gave us another grand orator. It was a woman, Mrs. Allen, who writes about health, housekeeping, etc., in the women's magazines. When I was talking with *her* about sticking to our job I quoted the above text about not becoming weary, etc. She said, "Mr. Root, that is the trouble with a world of people. They do not stick to their job long enough, and they do not really get down to the 'Root' of the matter." Just then I felt glad to think that *my* name was *Root.*

No. 4. I believe No. 4 hit me a harder clip than any other one. He pointed his finger in different directions over the audience as he sent home his wholesome and vehement words to the husbands and wives of the audience. In his business as a physician he said he often became almost a member of some households; and he found that some husbands would, even in his presence, scold and nag the good wife, and let it go without an apology. He gave one illustration that sent a chill down my back. A certain man was in the habit of scolding and nagging the poor patient wife as well as the rest of the household, to such an extent that he did not scruple to complain and criticise even in the presence of the doctor. Finally the patient wife died. Then, but not before, the man awoke and remembered his sins. Nothing could console him. He said to the doctor, after she was dead, "Oh! what would I give to be able to call her back and tell her how I regret my thoughtless words! Doctor, I would give everything I have in this world to be able to see her and talk to her just a few brief moments." Then he added something the doctor said he would never tell out to the world were it not for the fact that it would help a lot of husbands whose wives are still living. This poor man, in his paroxysms of grief, said:

"Doctor, you heard me make such and such expressions to my poor suffering wife. You heard me at times go on in this way until the poor woman was in tears."

The doctor was compelled to assent that he did remember; and he also added that he explained to his friend that it was often a question as to whether it would do good or harm to venture even a protest. And then came the reply. Now listen, dear reader, and remember. The poor bereaved man said something as follows:

"Doctor, you should have rebuked me fairly and squarely on the spot; and if *words* would not have been sufficient you should have planted your fist between my eyes and pounded some sense into my poor befuddled brain."

I want to confess, dear reader, that of late—yes, for a year or more past—when there has been some little disagreement between Mrs. Root and myself, when hasty words have come into my mind, or, perhaps I had better say, words prompted by Satan, I have had the good sense to say to myself, "The dear woman is now getting closer and closer to eighty years. If she should be taken away first, is it possible that I may *recall* what I am about to say?" May the Lord be praised I did not say it; but I feel guilty to think of anything so unkind or lacking in gentleness even coming into my mind toward the dear companion who has set an example before me and led me out of countless troubles in the years we have passed together.

Dr. Barker said if we wanted to be happy, the shortest cut toward real genuine happiness and satisfaction is to go a little out of the way to give encouraging words or a helping hand to somebody else. It does not matter particularly who it is. Give the whole wide world to understand that you are a friend to every man, woman, and child, no matter in what guise or what sort of clothing or circumstances you find them. Make them smile if you can, and give them a lift if they need a lift; and keep on so doing. If you lose some treasure that you might have obtained here on earth by rushing off to business, you will not only find yourself happy, but in the great future you may find also treasures laid up in heaven. Then the speaker quoted in a most eloquent way that beautiful passage in the 25th chapter of Matthew, commencing at the 31st verse. At the close he laid particular emphasis on the passage, "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me."

No. 5. This was the closing secret of happiness. When the doctor started out I could not make up my mind clearly as to whether he was a professing Christian or not; but his quotation of beautiful texts to clinch some point he had made caused me more and more to decide that, even if he *was* a doctor instead of a preacher, his talk would be of inestimable value to many *preachers* as well as to A. I. Root.

Dr. Barker said in closing that the dear Savior, over and over again (I do not know but it was a hundred times or more), emphasized the thought expressed in the beginning of that wonderful prayer, "Our Father who art in heaven;" and that we should all keep the thought constantly in mind that God is our Father—the Father of every man, woman, and child who looks up to him and calls him Father. He reminded us that we have a fashion of praying for things that we think are needed to make us happy. Sometimes the prayer has not been answered, and we feel sore about it. Doubtless many in that audience, he said, had persisted and *insisted* on getting the thing prayed for, even if the means used in getting it were not exactly fair. And then he added, "You can doubtless remember also that the thing you coveted did you *harm* instead of good. God knew best."

"CAST THY BREAD UPON THE WATERS."

Mr. Root:—I have just read Our Homes in this month's GLEANINGS. "Seek ye first the kingdom of God" is part of your text. That reminded me of something that I had better attend to before I forget.

You will remember that I wrote you a letter something over a year ago—I think it is quite a bit over a year, but I am forgetful, and haven't time now to look it up. I wrote you something about my printing-shop, bees, and about our gospel-tract work, etc. You printed my letter in GLEANINGS, and remarked that the readers could get my little calendar by sending for it, and added that they should enclose a stamp or something more than a stamp if they felt able to do so. Well, what made me think of that incident when I read this month's Homes is this: The motto or text at the top of this year's calendar is that very text; and in answer to your remark in GLEANINGS, a man in or near Modesta, California, sent us some stamps (I think 20 cents, if I remember right), and wanted calendars, etc. He also asked me to mail a calendar to a person somewhere in California, giving name and address. We mailed the literature as requested, and now comes the part that is of most interest to you. Not many months after that he wrote that the calendar which was sent to his brother-in-law was the means in God's hands of that man's salvation, especially the text "Seek ye first the kingdom of God," and also the one for July, "Be thou faithful unto death." This man further wrote that his brother-in-law had been a very profane man, and not very long after his conversion died in the hope of salvation.

How wonderful the dealings of God! That notice or remark in GLEANINGS caused this man to help us with stamps. His request for a calendar sent to his brother-in-law brought the mentioned text under his eyes, so that God could use it to his conversion. Some very insignificant things, with God's help and blessing, may accomplish great things. To God be all the glory.

I would just like to mention that our 1918 calendar will soon be ready for mailing. The first text is, "The coming of the Lord draweth nigh." The calendar will be sent out free as usual to all who apply for it as fast as we can mail and as stamps are forthcoming. If you see fit you can again mention it in GLEANINGS. Just say it in your own words as you see fit. The most important part is to get our name and address correct so that nobody will send to wrong place. S. E. ROTH.

Gospel Tract Mission, Rt. 3, Woodburn, Oregon.

Along with the above came a very helpful tract entitled "Suppose," and on the margin friend R. has written with a typewriter, "Who are *you* working for?" In regard to the letter above, again and again thru my busy life I have seen cases such as mentioned. Some little thing done on the impulse of the moment, and quickly forgotten, has brought forth jewels into God's kingdom.

SELLING HONEY ON SUNDAY, AND SOME OTHER THINGS.

And he said unto them, Verily I say unto you, there is no man that hath left house, or parents, or brethren, or wife, or children, for the kingdom of God's sake, who shall not receive manifold more in this present time, and in the world to come life everlasting.—LUKE 18:29, 30.

Mr. Root:—I enjoyed reading your Home talk in GLEANINGS for January. I was reminded of the Home talks I used to read in GLEANINGS thirty years ago, and how much good I derived from the same—one of them especially, when I was blind with sore eyes. My mother read it to me. It was about every one bearing his own share of the sorrows. It caused me to be more patient, and trust our heavenly Father more. I hope you may be spared many years, as your light is yet shining brightly for our Father's cause.

There is a piece written by the editor in regard to selling honey at the door. The largest sales seem to be on Sunday. That does not appeal to me. Perhaps one might have a sign to turn around on Saturday night. We did that with a rent sign we had in front of the house. I do like to talk bees to people; but hardly would like to do it on Sunday for the purpose of financial gain. Our influence counts much with others. There is quite a good deal of labor done here on Sunday; but one man told me that when he had tried resting his teams and men on that day they had accomplished more work; and a young man I know, a carpenter, when Saturday night came said he would not work next day, and all the rest of the twelve workmen did the same by his example. We poor mortals need every seventh day to get spiritual strength to live right and do good to others. That is my belief. J. F. VANPETTEN.

Long Beach, Cal., Jan. 20.

My good friend, I am glad you make mention of taking down the sign "Honey for Sale" or fixing it so it could be easily turned around—that is, at night or after dark. Now, while we are trying to remember the Sabbath day to keep it holy, we should also use our best judgment and try to avoid antagonizing the people who may not think as we do. People often come to our place on Sunday afternoon, sometimes just at church time, and want to look over the premises. This is especially the case since automobiles have become so common, and the city people, many of them, choose Sunday to go out into the country or go visiting. My judgment is, after praying over the matter, that we should be a little careful about laying down cast-iron rules. I would by all means advise either taking the sign down or having the back side read, as we often see in many public places, "No visitors received on Sunday," or, if you choose, have the back of the sign read, "No honey for sale on Sunday." But suppose your caller did not notice the sign. If the honey is already put up in tumblers or jars I think I would hand him a jar; and if he is an acquaintance I would ask him to pay for it some other time, as you do not believe in doing business on Sunday. Try to preserve friendly relations with the caller, even tho you deviate a little, in order that he may not think you a "fanatic" on this question.

With the trying weather we have had of late, quite a number of farmers in our county have been out cutting their grain on Sunday. There will be, of course, differences of opinion in regard to this matter; but I feel quite sure, as you say, that the farmer or anybody else who tries to remember the Sabbath day and keep it holy will in the end come out ahead.

STARTING WITH SAWDUST AND ENDING WITH GOLD.

I have many times been pleased by original suggestions in the *Western Christian Union*, of Booneville, Mo. Below is a sample of its short editorials:

> The narrow way is not a mere sawdust trail all the way. It may start in a sawdust trail, but it should end in streets paved with gold.

THE CHICKEN BUSINESS IN ARIZONA.

Out of our family of seven boys and girls, I have only one brother left. From a letter received from him I clip the following:

> It does not cost us much to live here. We have our garden, and milk, and butter, and chickens. Nellie has one hen that brought out 18 chicks. She weaned them and came off with 16 more the next time. They are weaned, and she is laying again now. But we will not raise any more this year.
>
> Pima, Arizona, July 9. J. H. ROOT.

It seems a little strange and perhaps somewhat discouraging to find that a hen which goes away by herself and steals her nest makes a better record than hens that are helped by even an expert poultry-keeper. As I take it, in the above case the hen stole her nest both times. If one could succeed in making a whole flock of biddies do as well, how easy a matter it would be to get started in the poultry business!

HIGH - PRESSURE GARDENING

SEED POTATOES BY MAIL.

It is getting to be time, good friends, to think about making preparations for potatoes for planting next season; and our friends down in Florida, many of them, are preparing to plant at least a few potatoes about the middle of this month of September. We do not know what seed potatoes are going to cost, but they will probably be pretty well up. Some time about the last of March I saw the following in one of our seed catalogs:

> POTATO EYES BY MAIL—POSTPAID.
>
> For several years we have been furnishing our customers good sound potato eyes by mail. It saves high freight and allows you to get a start of new varieties for a mere nothing. These potato eyes give very best of satisfaction. Remember they come by mail postpaid, and sure to grow. Try our new kinds. At a very small expense you can grow an experiment patch for exhibition. It is very interesting and profitable; 75 eyes should produce a bushel or more of good sound potatoes any variety.

In order to have some early potatoes in Ohio I sent $1.00 for 125 eyes as above. My daughter here in Medina put them in her greenhouse about the first of April in a box of very rich compost, mostly well-rotted stable manure. When I got back about the first of May there were 75 pretty good strong plants. I gave them good care and planted them outdoors about the middle of May in good rich ground reinforced with some fine old stable manure. Today, August 11, I have just finished digging, and have got a good half-bushel of nice Six Weeks potatoes. Let us now go back a little.

About April 1, I gave another dollar for a peck of Early Ohio potatoes. These were bedded in good rich soil in the sun, protected nights until they made good strong shoots and roots, as I described repeatedly during the past winter; and this peck of potatoes were cut to one or two eyes, and planted in the open ground about the same time I planted my Six Weeks potatoes; but in spite of everything I could do the potatoes from eyes that came by mail never grew near as thrifty and strong as the Early Ohio that had a good chunk of potato for each plant. The trouble with the potato eyes by mail was that they were cut too small—that is, there was but very little potato attached to each eye. Some of them were not much larger than a nickel (potato, eye, and all). May be the largest of them was as large as a quarter; but they were sliced very thin. My opinion is that unless there is a pretty good chunk of potato with each eye, nothing can well make up for it. It is like bringing up babies on some substitute for mother's milk. Nature's provisions for the young animal or for the young plant cannot be very much improved on. Now for the Early Ohios.

From the one peck I got about 10 pecks of very nice potatoes, most of them large. By the way, a point comes in right here about Terry's plan of cutting to one eye. The Six Weeks potatoes were, of course, one eye. As a rule there was just one stalk and no more, and the potatoes are almost invariably of good size—almost none of them small. In several cases I found just *one* good large potato in a hill. The one eye and one stalk had given all its energies to the support of just the one potato. If you wish to avoid having little potatoes, follow Terry, cutting to one eye; and if you wish to go to the trouble you can pull out all stalks but one. Some of our Early Ohios are almost too large. Some writer years ago said that 20 bushels of potatoes for one planted was a very good crop; and that is exactly one-half what I got from my Early Ohios—10 pecks from the one peck planted. Perhaps I should add that a severe drouth, just as the potatoes were beginning to mature, probably cut short the crop of both kinds. The Six Weeks potato is probably an improved variety of the Early Ohio. It is a little earlier, looks very much like the Early Ohio, and we think, as a rule, it is of rather better quality.

THE "HIGH COST OF LIVING"—SOMETHING MORE IN REGARD TO IT.

The following, from a good Canadian friend, meets my hearty indorsement:

> THIS AFFECTS YOUR POCKETBOOK.
>
> I have no sympathy with the continual cry about the "high cost of living." If we would take a few moments to consider and change our ways, we should soon have this vexed question solved. We throw away or feed to the pigs much valuable food that should be used on the family table—for instance, milk, shorts, bran, and potato peelings. Science plainly proves that a quart of milk contains as much human nourishment as two pounds of chicken or two pounds of beefsteak (prevailing prices here, milk 10 cents per quart, chicken 28 cents per pound, and beefsteak 30 cents per pound). Again, take the skim milk that is considered almost worthless. We are taught by science that it contains the bone and muscle forming elements; yet how few use a jug of milk on the meal-table instead of the nerve-wrecking tea and coffee! The milk is thrown to the pigs and the tea given to the children, whereas it should be *vice versa*. The bran and shorts—the muscle and bone forming elements—are separated from the wheat, and the starchy part ground into flour. The former is fed to the cattle, the latter to the family; whereas the whole wheat should be ground and used for bread and porridge, etc.

Every farmer could, as easily as not, have his 5 or 10 hives of bees, and have from 500 to 1000 pounds of honey laid by in the pantry to be used in a great variety of ways instead of laying out the same amount of hard cash for sugar.

Honey can take the place of sugar in making ice-cream, and is superior. It is excellent in making wedding cakes, etc., keeping them moist and free from mould and mustiness; and here is a hint to those sending cookery to the boys in France: If you substitute honey for sugar, and use half the eggs and milk your recipe calls for, you may rest satisfied that it will neither mould nor dry out in transit. We have had very satisfactory reports of honey cookery sent to friends in the trenches. We prefer soda and cream of tartar to baking-powder in honey cookery. If you use a baking-powder recipe, add a pinch of soda. Forty years ago honey sold at 40 cents per pound, and butter at 10; but now honey sells at 15 cents per pound, and butter at 50; so it doesn't require much argument to prove which is cheaper.

Once a year we are taught by government experts that the better part of the potato lies next to the skin, so that those who take off a thick peeling throw to the pigs or on the garbage-heap the better part of the potato. Is it any wonder the human family has poor bones, poor teeth, poor health, and a poor pocketbook? Carlyle well said that "only one person in five thousand thinks."

The women of Ontario, Canada, were granted their franchise on Feb. 14, 1917.

JAMES M. MUNRO.

Slate River Valley, Ontario, March 3, 1917.

It seems to me that every family—especially families of moderate means—should have some sort of little mill (a coffee-mill if they cannot do any better) and grind their own wheat. A recent government bulletin declared that some of the wheat preparations we buy at the groceries cost as high as 48 cents per pound; and I greatly fear it is oftentimes poor hard-working people who pay this enormous price when they could by grinding their own wheat get it for less than *four* cents a pound. Just think of it! You are paying *twelve times* as much for your "daily bread" as you would have to pay if you ground the wheat in your own home. Better still, have a little patch and *grow* your own wheat. Have it nice and fresh. At present prices I do believe it would pay to have a little patch of wheat in the back yard, cared for with a little hand cultivator as you raise other garden stuff. You get a *nicer, plumper* wheat, and have it "fresh from the garden."

TWENTY-FIVE DOLLARS A DAY ON YOUR FARM.

Mind you, dear friends, I do not say you can make that *right along*, but I *do* think that many of you might make it for a day or half a day if you get right at it in selecting your seed corn for next year. See the clipping below from the *Practical Farmer*:

$25 PER DAY—CAN YOU EARN MORE?

If you would like to earn from twenty-five to fifty dollars a day, it cannot be done easier at this time of the year than by going into your cornfield and selecting seed for next year's crop. By practicing this method of seed-corn selection it is possible to increase your acre yield the following year five bushels over your average; so it can be readily seen, with corn at its present price. time could not be better spent. The great advantage in this practice is that the grower is able to get seed that he knows has matured in his normal growing season.

For several years past I have gone out into our cornfield in September and selected nice ears, as I have previously described, from the first that were fully matured. As a result we have corn that has escaped frost when most of the corn in this region is often badly caught. Another thing, by making a germination test of each ear, there are so few stalks missing this season that we did not "plant over" at all. Almost *every kernel* planted *grew*.

THE CHAYOTE IN MEXICO; SOMETHING FURTHER IN REGARD TO IT.

We give the following kind letter just about as our good friend wrote it. I am sure it will be read with great interest, not only because of what the writer says about the chayote, but because of the quaint way in which one not familiar with our language expresses himself. It does me a lot of good to get such letters, because it brings so vividly to mind the time I made that bicycle trip down in Cuba. when I spoke only English, and the different friends, beekeepers and all, spoke only Spanish.

Dear Mr. Root:—Four months ago I took a trial subscription at GLEANINGS. I am much pleased with the same, and am in search of a paper dollar to send to you in order to secure an annual subscription from October first. We have not yet postoffice money orders, and the "dollars" here are very scarce; but I think to find one if I search for it.

On page 641, GLEANINGS for August, I read what you say about the chayote, a very common vegetable in central and south Mexico. Here the chayote is found in every house, and in many gardens there are a great number of them. They have flowers in September and October, and the fruits are ready in December and January.

All that you say about the chayote is true and good, but you must add the following:

1. The flowers of the chayote are melliferous. I have seen many bees in the plantations near the Experimental Apiary in Mexico City, and here in the state of Michoacan. A good crop in my apiary is secured by the same.

There is also here a very melliferous plant named "chayotille," but this plant is a nuisance because it gives no fruit and kills the plants near by.

2. The roots of the chayote may be eaten also. Here after the second year of production the gardeners take out the roots in the following manner: A meter or so is taken from plant No. 1. Then they make an excavation in No. 2 in search of the roots, which are very capricious in form, and of a weight from 6 to 12 pounds. The second half, No. 3, is for the next year, and I must add that these tuberous roots are not necessary for the

life of the plant, which grows always, sometimes before the old crop is over. The roots are only another crop; and if they are not taken away from the earth they dry in it and disappear, leaving only the exterior cover. The tall roots are sometimes fibrous, but not all. The small ones are better; and all, after being cooked in boiling water, are very good in beaten eggs. Here the poor eat them alone with some salt, like potatoes.

I hope, Mr. Root, that you may make out to read my letter in such a bad English. I don't very well know how to write it; but if you wish you can correct my words and take from them some information for your readers about the chayote which I knew in France ten years ago. At home, near Marseilles, my father had some plants; but the utility of the roots and flowers was unknown.

Uruapan, Mexico, Aug. 24. P. Provensal.

TEMPERANCE

Wherefore do ye spend money for that which is not bread? and your labor for that which satisfieth not?—Isaiah 55:2.

Lay not up for yourselves treasures on earth, where moth and rust doth corrupt, and where thieves break through and steal.—Matt. 6:19.

My good friends, just about a year ago I exhorted (in my humble way) every voter in Ohio to be on hand at the coming election, and not only to vote dry but to take some of his time, and use all his influence to induce every other voter to vote dry also. You know how it turned out. The great wicked city of Cincinnati, with its millions of money (and lack of conscience) overpowered us. But they would not have overpowered us had every man voted who *could* vote outside of the city of Cincinnati. I have not the figures here; but the *American Issue* gave the number who neglected to go to the polls and did not vote at all. And even taking it for granted that a large part of them might have voted wet, there were still enough, without question, to defeat the bum element of Cincinnati and make Ohio dry.

Well, during the past year tremendous progress has been made for prohibition. It would take a whole page to enumerate it all. Not only the United States but the whole wide world has been rousing up from its lethargy. The tremendous demand for "efficiency," not only in war but in the factory, on the farm, and everywhere else (in consequence of the terrible war), has thrown a searchlight so strongly on the results of drink—yes, the results of even the very moderate use of intoxicants — that we may say there has been a great advance toward prohibition. Just now we are rejoicing that the distillers are cut off by federal law. Not only that, a similar law cuts off "Scotch whisky" and every other kind of whisky that has heretofore been shipped into the United States by the carload and shipload. May God be praised for this tremendous triumph of righteousness over iniquity. It is true that the great stock of liquors in bond may be used unless the President shall demand that it be converted into alcohol for fuel and war munitions. But already the price of a drink of whisky has gone away up, and bids fair to go higher. Of course, there are those who will have it, no matter what the price may be, but they are fast becoming fewer and fewer.

Now, this issue of Gleanings will probably be my last chance to urge the voters of Ohio to rouse up, put aside business, care of crops, or anything else, in order to get in a vote to make Ohio dry. As I have said before, warn your neighbors and impress on them the necessity of being ready and on hand on election day. We must work and pray as we never did before; for as Ohio goes in the coming election, it is quite probable that the whole United States will go; and to a certain extent *the whole wide world* is just now watching our nation, and taking example from us. Of course, we feel sad to think the brewers—at least for the present—can go on with their work of taking the grains that are sorely needed for food to make that which is the greatest *enemy* of food that the prince of darkness ever invented.

Below is something I just clipped from the *American Issue*, which *they* credit to the *Herald and Presbyter;* and altho I do not as a rule approve of sarcasm, I think the sarcasm in the following article hits the very spot that needs hitting a tremendous blow as nothing else could do. Read it over and over. Read it to your wife, and then read it to the voters whom you know, that might possibly be induced to vote wet. May God speed the little clipping.

THE MOTHERS AND THE BREWERS.

Upon the women in their homes is falling the burden of conserving the food supplies of the nation. They are urged and exhorted and commanded to slave and save, and scrimp and take care of every crumb and tuber and leaf and shred of food. Yes, please you, this is well, and women will do their duty, with aching back and bleeding fingers. Mothers, with their boys in the field and their hearts aching for them as they pray, will darn and delve, will knit and cook, that the country may be saved. Yet, all the same, that bloated brewer, avaricious and rapacious, will go on manufacturing his disease-producing, deadly poisons out of the precious grain that would make eleven million loaves of bread a day. What matters it that millions of people are perishing for that food, and that we and our allies shall need every grain that can be grown, these conscienceless marauders continue to ravage the granaries of the land.

Grind down the women. Lash them to their toil. They are only women. They are the worthless mothers of the soldiers. They are the insignificant toilers of the households. Lay on the stripes and goad them to their tasks in the name of patriotism. And let these Teuton brewers commandeer the grain and make the poison that shall break down the finance, the efficiency, and the food supply of the nation.

Common sense and a lofty spirit would demand that this abject course shall terminate. Let the women have consideration, and let the enemies of our nation and our race be taught that they cannot have their beastly, piratical, highway-robber privilege accorded to them any longer. In the name of all that is hopeful and good, exit the scarlet woman and the brewer; enter the Mother.

Here is another clipping, from the *Sunday School Times.* It illustrates the stranglehold that the brewers seem to have over in England on the honest industries of the nation.

SUGAR ONLY FOR THE BREWERS!

No one save Mr. Arthur Mee, of the London *Daily Chronicle,* author of "Defeat," could have followed that warning speech by the editor of *The Spectator.* Said Mr. Mee:

"All over England you hear this cry for prohibition. It comes from the heart of a nation fighting for its life, with the wolf almost knocking at the door. We have lived thru three red years of matchless courage and sacrifice, to see our Government, still as of old, worshipping our beer gods, crowning our beer barons, rolling 26,000,000 barrels of beer thru the streets of England while our people sit by their fires and wonder where their food is coming from."

Mr. Mee excoriated Lord Devenport, the then Food Controller, who has put the British nation on its honor not to eat so much.

"We must eat a little less," he declared, "that other people may drink more."

It was a tragic moment when Mr. Mee told the story of a contractor who, feeding 40,000 working people every day, ordered sugar for them; and, sending to the dock for a delivery order for the sugar, received instead a letter from the Port of London Authority which said:

Delivery of sugar stopped by Food Controller unless for brewers!

There were incredulous cries of "No! no!" from his hearers when the newspaper man held up the letter written on the official note paper of the Port of London Authority, and then hot cries of "Shame!" followed.

Not many days have passed since this mass meeting issued its challenge, but they have seen the retirement of Lord Devenport, and one important change is following fast upon the heels of another.

WILL ABSORB ALL MEN.

We find the following in the *American Issue,* which they clip from the *Chicago Tribune*:

"Peoria's manufacturers will snap up every available man Monday morning," said a conspicuous Peoria, Ill., business man. "Between 1500 and 2000 men will be put out of employment in the distilleries, but there is a place for every one of them in the tractor factories, the implement works, and in other Peoria industries. We can use every ounce of coal, and are glad to get it, that the distilleries have been requiring. Industrially, Peoria will never know the distilleries have been closed."

MAY GOD BE PRAISED THAT WE HAVE GOT SO FAR.

How does this suit you, which we clip from the Jacksonville *Times-Union?*

No more foreign liquors can be imported into this country, and no more domestic liquors made—so there you are.

NOT ONLY FOOD BUT "FUEL" ALSO.

See the following from *The National Advocate*:

BEER AND THE PRICE OF COAL.

Writing in *The Outlook* on "Prohibition and the Price of Coal," Lewis E. Theiss, of Muncy, Pa., quoted the Rev. H. N. Cameron, of Latrobe, Pa., as having said recently, in a letter to Mr. Herbert Hoover:

"I have lived all my life in western Pennsylvania. I worked for seven years at the rolls, and have seen the effect of beer on output; and I know it is true, as J. D. A. Morrow, of the Pittsburg Coal Producers' Association, declared before the Inter-State Commerce Commission yesterday, that the production of coal in the Pittsburg district alone would be increased 5,000,000 tons if strong drink were eliminated. And beer, may I repeat, the so-called light drink, causes more inefficiency in men and preempts more space in freight trains than whisky."

And then Mr. Theiss went on to remark:

"In fact, all testimony on the subject—from factory, mine, and shop—tells the same story. Take away drink, and the efficiency of the workingman increases amazingly. The simplest, the surest, the only certain way of increasing coal production at this time is by prohibiting drink. Unless we do that our citizens will suffer from cold, our factories will be hampered for lack of fuel, our production of war material will be hindered, the war will be lengthened, and thousands of lives will be lost needlessly. If we want cheaper coal during the war, we must take, as a war measure, the one and only step that will surely increase coal production."

TOBACCO AND CIGARETTES; SOMETHING ABOUT CIGARETTES IN CHINA.

Last Sunday a missionary from China gave us a talk in our church. He said the American Tobacco Company was just now sending cigarettes to be given away in China by the carload. He said a wagonload would be carried into a town and the agent would distribute them among men, women, and children, without regard to age or anything else. Then they put up posters all over the Chinese town recommending cigarettes. Our friends are probably well aware of what China has recently done to get rid of opium. Let us not only do everything in our power to help China to treat the cigarette traffic as she did those who persisted in violating the laws against the opium traffic. The missionary told us they were doing everything in their power to warn the Chinese, especially the schoolchildren, against taking and using cigarettes. They posted printed handbills right over the bills put up by the tobacco company; and when the missionary left, only a few weeks ago, the tobacco people were trying to make out that it was against the Chinese laws to cover up or tear down their posters. The agents of the cigarette company have a slogan something like this: "Among the four hundred millions of men, women, and children in China, we want four hundred million to be *cigarette-users.*"

It may not be known to our Ohio people that we have strict laws here that forbid any such work in Ohio. Two years ago we printed a lot of leaflets giving a copy of our Ohio law. The heading of the leaflet reads as follows:

"Shall the State of Ohio continue the business of growing a crop of fools, idiots, and imbeciles?"

These leaflets will be mailed free of charge to any one who will see to distributing them judiciously.

Whatsoever a man soweth, that shall he also reap.

We clip as follows from *American Issue:*

WHISKEY-SOAKED KENTUCKY NOW RAISING FUNDS TO TEACH HER SOLDIERS TO READ AND WRITE.

> A Columbus man was in Louisville, Ky., the other day. He saw the city placarded with vivid posters, on which was printed,
>
> "*Fifteen regiments of our Kentucky soldiers cannot read or write; must be taught before they go into the trenches. Will you assist?*"
>
> "Why don't you tear down those posters?" asked the Columbus citizen of a gentleman, "for what they say cannot be true."
>
> "Unfortunately, they *are* true," was the response. "We are raising money to send teachers to the camps to teach the boys to read and write. The trouble is, Kentucky has boasted for years of her production of whisky, has talked about the millions invested in distilleries, but she has neglected the education of her people. We have had whisky and distilleries, and now we have a state hopelessly in debt and thousands of her people illiterate."

Sounds different from Kansas, doesn't it?

HEALTH NOTES

"VICTUALS AND DRINK"—ESPECIALLY THE MATTER OF DRINK.

I hold in my hand Farmer's Bulletin No. 817, entitled "How to Select Food." This bulletin of 22 pages was written by two bright and able women. We have space to make only a couple of extracts. The first is in regard to economy in purchasing.

> Prepared cereals differ so much in form that their appearance gives little idea of the amount of nourishment they yield. For instance, the amount of flour which will fill a cup weighs 4 ounces; that of rice, 8 or 9 ounces; and that of flaked breakfast cereal, hardly half an ounce; and it is this weight rather than bulk or volume which indicates food value. Such differences in weight and volume must be remembered by those who wish to buy their food as cheaply as possible. Some breakfast foods retail at 48 cents a pound (15 cents for a five-ounce package); others cost 5 or 6 cents a pound. The cheapest ones are usually those sold in bulk. The housekeeper, by grinding her own wheat, can get a cereal breakfast food for a still smaller sum. When wheat sells for $2 a bushel the cost per pound is between 3 and 4 cents. This wheat can be prepared by washing, drying, and then grinding in an ordinary coffee-mill.

You will notice, friends, that this places emphasis on what I have so often talked about. Just at present the Root neighborhood are living largely on wheat grown on our own ground. Instead of using a common coffee-mill we have a little mill that has been referred to already on these pages, costing four or five dollars. Huber rigged it so as to be run by a little cheap electric motor, so all you have to do is to pour your clean wheat into the hopper, turn the switch, and then go for your "grist" when you get ready. While this cracked wheat costs only three or four cents a pound, as stated above I greatly prefer it to any other cereal, or any other flour that can be purchased at any price. Just think of the short cut between producer and consumer, by growing your own wheat and grinding it in your own little mill! You need not take my word for it—just weigh the stuff you buy after passing thru the hands of several middlemen and contrast it with the cost of wheat prepared as above.

In regard to the method of cooking, let me make another extract from this bulletin:

> There are several practical points to remember in cooking cereals. One is that there is more danger of not cooking them enough than of cooking them too much. Uncooked cereal preparations, like cracked wheat and coarse samp, need several hours' cooking, and are often improved by being left on the back of the stove or in the fireless cooker overnight. Cereals partially cooked at the factory, such as the rolled or fine granular preparations, should be cooked fully as long as the directions on the package suggest.

You will notice by the above they recommend several hours' cooking. With a gas-stove such as we use, this is easily managed. Enough water is added so that when it is cold the cooked wheat can be readily cut in slices, to be warmed up in the oven at mealtime. I always want with it some good butter, cream, and a teacupful of milk right by my plate. Now, if there is any place where good honey just "hits the spot," it is with butter and cream on this cracked wheat with some cold milk to drink. If you are still so fortunate as to have some maple sugar or thick maple molasses, many of you will prefer it to the honey unless the honey is very thick and of extra-fine quality. I do not know of any better or more sensible remedy for constipation than the above cracked wheat. For this purpose the bran should be left in. If you wish to make hot biscuit to go with your honey, perhaps it would be well to sift out the coarser particles.

By the way, we have been urged repeatedly to use corn instead of wheat, on the ground of economy; and you can, it is true, use corn in the same way. Popcorn makes a delightful dish ground and treated as above. But just now our daily papers are telling us that corn and wheat are very nearly the same price—$2.00 a bushel. When this is the case I am sure the wheat furnishes more nutriment.

Now for the drink part of my talk. I have already suggested milk; and I use this in place of either tea or coffee, and have done so for years. Of course, I drink water between meals, or whenever I am thirsty outside of mealtime. What suggested to me the matter of the water we drink is a sad letter that has just come to hand. One of Mrs. Root's nearest friends, and I think I might say one of the dearest ones, has just lost her life. She had been in feeble health for some time; but recently her husband, like thousands of other people wanting a home, moved on to a place out in the woods. I think the good woman told Mrs. Root there was a beautiful spring on the place. Now, I am not sure that after moving out in the woods they got their water from this spring, but it would seem so. In a letter written to Mrs. Root by one of the neighbors occurs this sentence:

"The doctor said it was the water they drank that caused their sickness. All the children were sick, but are better now."

This reminds me that for almost all my life I have been troubled more or less with what they used to call "summer complaint;" and it does not always occur in summer either. If I happen to go away from home and drink freely of some water I am unused to, this old chronic trouble gets started, and sometimes it takes a week and may be a month to get straightened out again. Hard water from a well is almost sure to start the trouble; and therefore I have insisted on getting rain water when I happened to be where I could not get distilled water, or water, say, from soft-water springs that has been abundantly tested. People used to think that water from a running spring is always the best in the world. Well, this is, perhaps, generally true, altho sometimes spring water as well as well water contains minerals that are very harmful to many people. If you have a slate roof to catch the rain water, and it flows thru a filter into a clean cistern, you are probably all right. But I have for years found it safer to have the cistern water boiled, both here in Medina and in my Florida home. Here in Medina we have a slate roof, and about as good a cistern as can be made. But coal smoke from our factory and from the locomotives near by, besides dust from the well-traveled road right in front of our house getting on the roof, renders the water more or less impure. Boiling kills all the germs, and precipitates considerable of the mineral matter. I think it is best *freshly* boiled, and then keep it in a glass fruit-jar or in some other covered receptacle. Altho we have a refrigerator, I have found by repeated tests that ice-cold water does not work well with *my* digestive apparatus. When we have cool nights the water is always sufficiently cool for my taste and health.

Now, friends, please do not get the impression that the water from springs or any other source is worse in Florida than in other places. I believe the health departments, not only of Ohio but of other states and the large cities, decide almost to a unit that the water that has been passed upon and pronounced good in our large towns and cities is safer than the water from wells or even springs, as a rule.

Where large numbers of people have been getting their water for years past at a particular spring, and found it wholesome, it is probably all right, and the same with wells; but everybody should be careful about drinking water from old *unused* wells. Where water is drawn every day (the larger the quantity the better) the well is almost the same as a running spring; and running water is always better than standing water.

In going into a new locality people should be especially careful about drinking water from either well or spring until it has been examined and pronounced good, or has been proven to contain no deleterious matter. Most wells or springs are, of course, liable to contamination from surface water, especially where there are many homes grouped together. Having a spring or well in proximity to stables, pigpens, or old-fashioned outdoor closets, has been thrashed over so much I hardly need mention it.

In conclusion, dear friends, if you have or have had any such troubles as I have mentioned, be very careful about your drinking water. It will not do any harm to boil it, and it may be the saving of life.

By the way, I forgot to mention that my old physician, Dr. Salisbury, recommended drinking boiled water while it is about as hot as you can bear it. Many times when my mouth tastes bad, and I feel symptoms of my old trouble, a teacupful of boiling water poured a little at a time into a saucer, and sipped slowly while it is about as hot as I can bear it, sweetens up my stomach and wards off the trouble.

My long-time friend and stenographer, W. P. Root, adds that he agrees with me exactly in all the above, except that he uses *rye* in place of wheat. Rye is also mentioned in the bulletin I have referred to, and is usually quite a little cheaper than wheat; and I would suggest rye and other grains for a change used in a simliar way.

WHO'S WHO IN APICULTURE

State	Beekeeping taught in Agr. College	Net Weight Law?	Foul brood Law?	State Inspector or Deputy Name Address	Sec. or Pres. State Ass'n Name Address
Alabama					
Arizona	Yes	Yes	Yes	J. P. Ivy...........Phoenix	Geo. M. Frizzell........Tempe
Arkansas					J. L. Pelham.......Hutchinson (Ark. Valley Bk. Assn.)
California	Yes	Yes	Yes	County System	F. Fay Lewis..(No.) Oak Park M. C. Richter.........Modesta
Colorado			Yes	Wesley Foster.......Boulder	S. Francis..........Longmont
Connecticut		Yes	Yes	H. W. Coley.......Westport A. W. Yates.......Hartford	L. W. Adams........Hartford
Delaware					
Florida		Yes			J. R. Hunter.....Wewahitchka
Georgia		Yes			J. J. Wilder...........Cordele
Idaho	Yes		Yes	Guy Graham..........Boise	R. D. Bradshaw.......Fayette
Illinois			Yes	A. L. Kildow.......Putnam	J. A. Stone........Springfield
Indiana		Yes*	Yes	Frank Wallace..Indianapolis	R. B. Scott.......Indianapolis
Iowa	Yes	Yes*	Yes	F. E. Millen...........Ames	H. B. Miller......Marshalltown
Kansas	Yes		Yes	G. A. Dean.Manhattan (No.) S. J. Hunter.Lawrence (So.)	O. A. Keene...........Topeka
Kentucky			Yes	County System	Prof. Vansill........Lexington
Louisiana		Yes			L. T. Rogers.......Shreveport
Maine		Yes			O. B. Griffin..........Caribou
Maryland	Yes			G. H. Cale......College Park	G. H. Cale.......College Park
Massachusetts	Yes	Yes	Yes	B. N. Gates........Amherst	T. J. Hawkins.....(E.)Everett P. S. Crichton ....Boston
Michigan	Yes	Yes	Yes	B. F. Kindig...East Lansing	C. P. Campbell...Grand Rapids
Minnesota	Yes		Yes	C. D. Blaker....Minneapolis	L. V. France.........St. Paul
Mississippi					
Missouri	Yes		Yes		Dr. L. Haseman.....Columbia
Montana	Yes	Yes			S. F. Lawrence........Hardin
Nebraska	Yes	Yes	Yes	County System	
Nevada		Yes			
New Hampshire...		Yes			
New Jersey.......	Yes		Yes	E. G. Carr.......New Egypt	E. G. Carr.......New Egypt
New Mexico.....			Yes	County System	H. B. Barron......Hagerman
New York.....	Yes	Yes	Yes	Com. of Agr.........Albany	F. Greiner.............Naples
North Carolina..					S. S. Stabler.........Salisbury
North Dakota....		Yes			
Ohio	Yes		Yes	H. J. Speaker......Columbus	Dr. E. Kohn.......Grover Hill
Oklahoma	Yes		Yes	Prof. E. C. Sanborn Stillwater	F. W. VanDeMark...Stillwater
Oregon	Yes				
Pennsylvania	Yes	Yes	Yes	J. G. Sanders....Harrisburg	H. C. Klinger........Liverpool
Rhode Island.....			Yes	A. C. Miller ....Providence	G. B. Willis.......Providence
South Carolina....					
South Dakota.....		Yes		District System	L. A. Syverud.........Canton
Tennessee	Yes	Yes	Yes	J. S. Ward.........Nashville	C. E. Bartholomew...Knoxville
Texas	Yes		Yes	F. B. Paddock...College Sta.	A. M. Hasselbauer.San Antonio
Utah		Yes	Yes	County System	J. C. Henager..Salt Lake City
Vermont			Yes	J. E. Crane.....Middlebury	J. E. Crane.......Middlebury
Virginia					Prof. W. J. Schoene.Blacksburg
Washington			Yes	County System	J. B. Ramage......No. Yakima
West Virginia....		Yes	Yes	C. A. Reese.....Charlestown	C. A. Reese.......Charlestown
Wisconsin	Yes	Yes	Yes	N. E. France......Plattville	Gus Ditmer..........Augusta
Wyoming		Yes	Yes	County System............	
Ontario, Can.....	Yes		Yes	Morley Pettit........Guelph	Morley Pettit...........Guelph

* Comb honey excepted.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Michigan's best white extracted honey in packages as desired. Also comb honey.
A. G. Woodman, Grand Rapids, Mich.

FOR SALE.—15000 lbs. white extracted alfalfa and clover honey in 60-lb. cans. Who wants it, and at what price? S. F. Lawrence, Hardin, Mont.

FOR SALE.—Clover honey in sixty-pound cans, 15c per pound; No. 1 white comb, $4.50 per case of 24 sections; No. 2 white, $3.50 per case, six cases to carrier. H. G. Quirin, Bellevue, Ohio.

FOR SALE.—Clover, heartease, No. 1 white comb, $3.50 per case; fancy, $3.75; extra fancy, $4.00; 24 Danz. sections to case, extracted, 120-lb. cases, 15 cts. per lb. W. A. Latshaw Co., Carlisle, Ind.

One or 100 barrels mild-flavored light-amber honey, just right for blending with Northern honeys. For sample and price F. O. B. New York, address Elton Warner's apiaries, San Juan, Porto Rico.

CALIFORNIA ORANGE HONEY.—About the last opportunity to get a few cans of this fancy honey—white, heavy body, superb flavor. Also California light amber.
James McKee, Riverside, Cal.

FOR SALE.—White-clover extracted honey of the finest quality; was left on the hives until thoroly ripened; it is put up in new 60-lb. tin cans. Price $8.50 a can. Sample by mail 10c. Cash must accompany each order.
G. A. Barbisch, Rt. 1, La Crescent, Minn.

HONEY AND WAX WANTED

WANTED.—Comb and extracted honey.
J. E. Harris, Morristown, Tenn.

WANTED TO BUY beeswax. Highest prices paid. W. A. Latshaw Co., Clarion, Mich.

Small lots off-grade honey for baking purposes.
C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

WANTED.—Honey, carload or less, state lowest price. O. N. Baldwin, Baxter Springs, Kan.

WANTED TO BUY a quantity of dark and amber honey for baking purposes.
A. G. Woodman Co., Grand Rapids, Mich.

WANTED.—Strained honey in barrels and cans. Send sample. State quantity and kind. Jay-Kay Supply Co., Inc., 163 Atlantic Ave., Brooklyn, N. Y.

WANTED.—Carload or less white and darker extracted. State quantity, quality, packing and lowest price. HOFFMAN & HAUCK, Richmond Hill, N. Y.

WANTED.—Small quantities of cappings and old combs free from honey and brood. State net weight and price wanted.
R. W. Cobb, 1534 Wyandotte Ave., Lakewood, O

Chas. Israel Bros. Co., 486 Canal St., New York Established 1878. Wholesale dealer in Honey and Beeswax. We buy Honey. Send us samples and the quantities you have, also your best price delivered New York. We pay the highest market price for clean, bright yellow beeswax.

WANTED.—Comb and extracted honey at jobbing prices. National Honey Producers' Association, Kansas City, Mo.

WANTED.—Carload or less lots white and buckwheat comb honey. State quantity, grading, section size, and lowest price. HOFFMAN & HAUCK, Richmond Hill, N. Y.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

$19.00 buys 100 comb-honey shipping-cases holding 24 4 x 4 x 1⅜-in. plain sections, including 3-in. glass, nails, and corrugated paper. This price is f. o. b. our factory in Wisconsin, and includes $1.00 for a subscription to the Domestic Beekeeper the balance of this and ALL of 1918. Address Service Department, Domestic Beekeeper, Northstar, Michigan. Can make prompt shipment.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

2000 FERRETS. Prices and book free.
N. A. Knapp, Rochester, Ohio.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

FOR SALE.—One-ton Reo truck in good shape. A bargain for the man who needs it. Address No. 24, care of A. I. Root Co., Medina, O.

150 envelopes, 150 letter-heads, size 6 x 9½ inches, printed and mailed for $1.00. Samples free. Sun Co., East Worcester, New York.

SEND TODAY for samples of latest Honey Labels for comb and extracted. Not only the most attractive, but also the lowest in price. Samples free. Liberty Pub. Co., Sta. D, Box 4-E, Cleveland, Ohio.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

$21.00 buys 100 comb-honey shipping-cases holding 24 regular beeway sections each including 2-in. glass, nails, and corrugated paper; also $1.00 for a subscription to the Domestic Beekeeper the rest of this year and ALL of 1918. Address service Department, Domestic Beekeeper, Northstar, Michigan.

WANTS AND EXCHANGES

WANTED.—Albino queens. Who has Albinos?
D. E. Lhommedieu, Colo, Iowa.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED.—One four-frame extractor, reversible, but not necessarily automatic; must be a bargain.
Joseph S. Scott, Mt. Pleasant, Ala.

WANTED.—To exchange a one-minute "Mandel-Ette" camera for 10-fr. hives or supplies. Camera cost $5.00. E. A. Rahn, Taylor Ridge, Ill.

WANTED.—Shipments of old comb and cappings, for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

WANTED.—Two or three hundred colonies of bees on shares run for extracted. I have power extractor 8-yr. experience.
Frank A. Childs, Olathe, Colo.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

$20.00 buys 100 comb-honey shipping-cases holding 24 4¼ x 4¼ x 1½ plain sections, including 2-in. glass, nails, and corrugated paper. This price is f. o. b. our factory in Wisconsin, and includes $1.00 for a subscription to the Domestic Beekeeper the this year and ALL of 1918. Address Service Device Department, Domestic Beekeeper, Northstar, Michigan.

GOATS

FOR SALE.—Two pure-bred Swiss Saanen twin does, good milkers, 3 years old; must go together.
Geo. White, Rt. 3, Milford, Mich.

REAL ESTATE

FOR SALE CHEAP.—24 acres in south Florida, partly improved; ideal for bees and poultry.
Joe Kiel, Sebring, Fla.

FOR SALE.—One twenty-acre farm with ginseng beds. Also 200 swarms of Italian bees and a quantity of fine honey put up in 60-pound cans at 15c a pound. L. Francisco, Dancy, Wis.

FOR SALE.—20 acres of land, situated in the town of Dorset, Ohio, 7 miles from Jefferson, the county seat, with paved street to Jefferson; also one thru town; also 53 colonies of bees; large 10-room house; also large barn, large granary, and other buildings. E. E. Griffis, Dorset, O.

VIRGINIA, North Carolina, West Virginia, and Ohio farms at $15.00 per acre and up, offer big values for the price. Best climate, markets, schools, and transportation. Good land and neighbors. Write F. H. LaBaume, Agr'l Agt. N. & W. Ry., 246 Arcade, Roanoke, Va.

A small farm in California will make you more money with less work. You will live longer and better. Delightful climate. Rich soil. Hospitable neighbors. Good roads, schools, and churches. Write for our San Joaquin Valley illustrated folders free.
C. L. Seagraves, Industrial Commissioner A. T. & S. F. R'y, 1934 R'y Exchange, Chicago.

FOR SALE.—A splendid apiary of 100 colonies of Italian bees in 8-frame hives, in one of the best locations for quantity and quality of honey; no disease in this part of Nevada; yard is fenced. There is a comb-honey house, extracting-house on two levels, 8-frame power extractor, 1 h. p. engine; have unlimited supplies of both comb and extracting. Price of bees $6.00 per colony for quick sale; hives will be left full of good honey. Other stuff, as much as desired, at bargain prices. Everything of the best, and in good condition.
J. E. Patton, Lamoille, Nevada.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

PHELPS queens will please you. Try them and you will be convinced. C. W. Phelps & Son.

Well bred bees and queens. Hives and supplies.
J. H. M. Cook, 84 Cortlandt St., New York.

FOR SALE.—Bees, queens, and honey in their season. H. G. Quirin, Bellevue, O.

Italian queens; hybrids, 29c; mismated, 35c; and pure, 50c. C. G. Fenn, Washington, Conn.

"She-suits-me" bright Italian queens; $1 by return mail till Oct. 1.
Allen Latham, Norwichtown, Ct.

Business first queens. Select untested, $1.00 each; $9.00 a dozen; no disease. Price list free.
M. F. Perry, Bradentown, Fla.

Three-banded Italian queens and a few hundred pounds of bees for sale. Safe arrival guaranteed.
J. A. Jones, Rt. 3, Greenville, Ala.

Gray Caucasian Queens, untested, $1.00; select untested, $1.25; tested, $1.50; select tested, $2.00.
H. W. Fulmer, Box G, Point Pleasant, Pa.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

Tested leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Vigorous prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing.
A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Italian queens, THE HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

FOR SALE.—84 colonies of bees on wired Hoffman frames, nice clean combs in 10-frame hives; no disease; 25 extra hives; 85 comb-honey supers.
Wheeler's Comb-Honey Apiaries, Rhinecliff, N. Y.

Finest Italian queens, June 1 to November, $1.00; 6 for $5.00; my circular gives good methods. Ask for one.
J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

Bright Italian queens for sale at 60 cts. each, $6.00 per doz.: virgins, 25 cts. each. Safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

PHELPS GOLDEN ITALIAN QUEENS combine the qualities you want. They are great HONEY-GATHERERS, BEAUTIFUL and GENTLE. Mated, $1.00; dozen, $12.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Son, Wilcox St., Binghamton, N. Y.

NOTICE.—I am now uniting nuclei for winter, and have some fine young queens on hand for prompt shipment at 75 cts. each or 12 for $7.00. Bees from this strain of Italians have this poor honey season stored 150 lbs. honey per colony.
J. B. Hollopeter, Queen-breeder, Rockton, Pa.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money refunded by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

FOR SALE.—25 colonies of Italian bees in Root 10-frame dovetailed hives. My entire equipment for sale; hives and supers all in A No. 1 condition—some new, remainder used two and three years. Will sacrifice if sold promptly. Send for complete list and photo of apiary.
C. H. Glase, 1331 Park Ave., Reading, Pa.

ITALIAN QUEENS, northern-bred, three-banded, highest grade; select untested, guaranteed; queen and drone mothers are chosen from colonies noted for honey-production, hardiness, prolificness, gentleness, and perfect markings. Price, one, $1.00; 12, $9.00; 50, $30.00. Send for circular.
J. H. Haughey, Berrien Springs, Michigan.

When it's GOLDENS it's PHELPS. Try one and be convinced.
C. W. Phelps & Son, Binghamton, N. Y.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each.
Henry S. Bohon, Rt. 3, Box 2112, Roanoke, Va.

QUEENS OF SUPERIOR QUALITY.—Untested, 75c each, $8.00 per doz.; select untested, 90c each, $9.00 per doz.; select tested, $1.50 each, $15.00 per doz.; extra select breeder, $5.00.
H. N. Major, South Wales, N. Y.

Queens, Queens, Queens. We are better prepared than ever to supply you. Untested, 55c each; tested, $1.00 each; select tested, $1.65 each. See our big illustrated ad. on first leaf of this journal.
W. D. Achord, Fitzpatrick, Ala.

FOR SALE. — Three-banded Italian bees and queens from the best honey-gathering strains obtainable. Untested queens, 75 cts.; 6, $4.25; 12, $8.00. Tested queens, $1.50 each.
Robt. B. Spicer, Wharton, N. J.

My bright Italian queens will be ready to ship April 1 at 60 cts. each; virgin queens, 30 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

None but the best Queens are sent out by us—three-band Italians that are guaranteed to give satisfaction. Untested queens, 75c; $8.00 per doz.; tested, $1.00 each. No disease. Orders filled promptly. J. W. K. Shaw & Co., Loreauville, La.

The demand for PHELPS' GOLDENS has been so great that we shall not be able to fill orders for less than $12.00 a dozen for the remainder of the season. Single queens $1.00 as usual. THEY ARE BEAUTIES! Try one. C. W. Phelps & Son.

Golden Italian queens, good as the best, to close out quick. Price, select tested, $1.00; tested, 75 cts.; untested, 50 cts.; no discount of any kind.
D. T. Gaster, Rt. 2, Randleman, N. C.

HELP WANTED

HELP WANTED.—Factory positions, men for lumber-yard and woodworking-machine operators; boys over 16 years for helpers on woodworking-machines; women and girls over 17 years to work on light manufacturing. Steady employment to competent workers. Apply by letter, giving previous experience, if any. Address The A. I. Root. Co.

Special Notices by A. I. Root

THE GARDENETTE AND THE SANDWICH SYSTEM.

In our issue for Nov. 15, 1916, I gave quite a write-up of the work done by B. F. Albaugh at Covington, Ohio, along the line of high-pressure gardening. I have made some tests of the "sandwich" plan, and I am glad to say it comes fully up to my expectations. It gave the finest lot of cantaloupes and melons I ever grew on our clay soil; but everything grows so rank, that my melons are going to be a little late in ripening. I first dug out a pit in the hard clay about 18 inches deep, 3 feet wide, and perhaps 12 feet long. After laying a tile thru the center to carry off the surplus water I put on perhaps six inches of strawy stable manure; then a load of sand and a load of old well-rotted stable manure, thoroly mixed up, and some good garden soil to top off with. Well, everything growing on this sandwich bed has shown remarkable thrift and vigor. I can readily believe what friend Albaugh says in his book, that three or four square rods under such treatment will pay a big per cent on the money and work invested. If you have only a *little spot*, where the sun can get at it some time during the day you can grow a lot of stuff on it. For a single hill of melons, squashes, or cucumbers, dig a hole about the size of an ordinary wash-tub. Fill this with manure, sand, fallen leaves, or trash of almost any kind, and you will get vines that will grow and produce beyond anything you ever saw.

The book also describes what the author calls a "plant incubator." It is a miniature hot-bed warmed by a single little coal-oil lamp; and I feel sure that it would be a wonderful and attractive plaything for the children, even in winter time. Just now, while there is so much talk about "war gardens," such things ought to possess a new interest.

The price of friend Albaugh's book, nicely bound in cloth, is $1.25. The beautiful pictures that illustrate it from beginning to end are worth almost if not quite the price of the book. We offer the book postpaid by mail with GLEANINGS one year for $1.75. If you want to make one or more of the children a birthday or Christmas present, I can think of nothing better than "The Gardenette; or, City Backyard Gardening by the Sandwich System."

"THE EVILS OF TOBACCO AND CIGARETTES."

The above is a book of 126 pages, just out, written by L. H. Higley, Butler, Ind. Mr. Higley is the editor of the *Butler Record.* I am glad to see just one editor who dares come out "in the open," and tell us the truth about tobacco. I wonder how many editors of our various periodicals are not users of tobacco in some manner. On a page partly blank, right in the middle of the book, in large plain letters, I find the following:

"As girls nurse a doll to imitate women, boys smoke and chew to imitate men. What is the moral?"

I will tell you what a *part of* the moral is. Small boys get glimpses of cigarettes, and think that cigarettes are just the thing with which to imitate a man. The summing-up of things in this book is simply awful to contemplate, especially when we are talking of "efficiency" and "preparedness" as the whole world never talked it before.

Send 25 cents and get the book; and if you have a boy or boys let them read it too—yes, let the girls read it. I think that if you start in, on almost any page, you will read the book thru to the end.

"HARNESSING" THE WIND.

If any of our readers can give me any information in regard to charging storage batteries by means of windmills or wind power, I should be very glad, *just now,* to find out where it is being done. There may be shortages and monopolies on coal, gas, and gasoline; but, thank the Lord, there is not likely to be any "holdup" on the wind that blows, just over our heads, *everywhere.*

Sept. 24.—Just as we go to press I learn that J. F. Foster, of Poynette, Wis., is running an electric automobile the batteries of which are charged by means of a windmill. Therefore it has actually come to pass that automobiles can be propelled by wind power instead of gasoline.

A FARMER'S RAT STORY.

We take pleasure in clipping the following from the *Patriot-Phalanx*, Indianapolis:

Dear President Wilson:—Statisticians tell us that rats consume $160,000,000 worth of food every year in the United States. This leads me to ask a question: If you had the power would or would you not annihilate all the rats and forbid anybody bringing them back? In your effort to annihilate these useless and wasteful rodents would you enact township laws or national laws? for surely if you drove all the rats out of one township you could not keep them out unless you destroyed the rats in all other townships.

In fact, Mr. President, would it not be a fine thing, worthy of attention by your departments, to inaugurate a general rat-killing?

Rats don't make good soldiers, nor do they help to feed them, nor to weaken the enemy, nor to build airships or U-boat destroyers.

Mr. President, let's banish the rats.

AROUND THE OFFICE

M.-A.-O.

Well, I am still here despite what I reported about "Old Selser" in our last, but it's by a mighty small majority. I have been having to maneuver for position constantly since Sept. 1. For what do you think! The very day that the first copy of the September number of Gleanings was off the press (containing, as you know, some references of mine to the aforesaid and his honey troubles in New York State), who should land right here in the office but Mr. Wm. A. Selser, Esq., of Philadelphia, Pa.? I went fishing the rest of that day and all of the next, hoping he would get out of town. But he didn't. I couldn't play hooky any longer without a salary cut, so I came out of the bushes. Did I get "stang?" I did. Then I got stang some more and some more. I also learned distinctly from several sources that Wm. A. Selser had been associated with the Root company for nearly 30 years, never in the penitentiary, and that I would have to put on the soft pedal hard—whatever that means—whenever I might feel like taking his name in vain. So I take it back—because I have to —— (censored) it! When he arrived the other day, no one could tell whether it was baggage or a human being getting off the car, but it moved right toward the office and eventually proved to be Mr. Selser, Esq., and his handbags, that he set out to prove were loaded up to the nozzle with ammunition to fight for higher prices for honey for the beekeeper. He says he is State Inspector for Pennsylvania and a beekeeper of long standing, and he told me properly and emphatically he was for the beekeeper every time. I told him to never mind and not to unload any more stuff out of those bags and I would take his word for it. I have made it a lofty and unshakable principle thruout all of life's vicissitudes to say 'most anything or take 'most anything back rather than take a licking. (Addendum—No fooling, I don't think Selser is so awful bad.)

* * *

Look ahere! A lot of you fellows who are piling onto my back all to oncet can just pile off. In these days of cabbage-worm affliction, hay fever and small honey crop, I am not feeling like taking any more than I have to. I tell you I have had about enough between squash bugs, skunks in my apiary, cabbage worms and ragweed without a lot of you fellows trying to break down my salary communication trench with the A. I. Root Co. by bombarding "Uncle Amos" and other editor Roots with poison-GAS letters agin me. To particularize: Some good old saint up at Little Britain, Ont., in all good faith, writes inquiring "what account does M.-A.-O. expect to give for all his idle words." M.-A.-O. ain't

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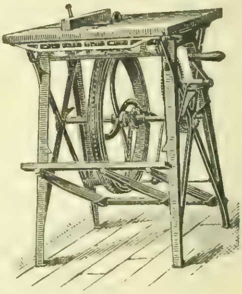

Around the Office—Continued

figgering on giving any account for them at all—they ain't worth accounting for. That gets him off my back, right straight. Then a well-meaning soul out at Morrill, Kas., quotes Ephesians 5:4 on me, which same text appears to be mostly about foolish talking and jesting and doesn't seem to be boosting it very much. He sends along a newspaper clipping to prove that "durn it" and "blame it" and "ding it" mean something else and that "gosh" and "golly" mean something else worser still. That old saint can just slip down off my back when I tell him I don't mean these ever to mean anything else than they do mean—and Corinthians 13:5. I guess when he gets that one of Paul's soaked into his skin a-plenty he won't pass me any more Eph. 5:4, so he won't. But I have kept the biggest shillalah in my whole whang-doodle for the grand finale of this argument. I figger it's a humdinger for me and a fareyewell right for all hostiles trying to pinch off my salary. Get ready! There's one PREACHER everlastingly on my side. He lives down at Josephine, Indiana Co., Pa. He's come right out bold on my side, too, and says I have been furnishing texts for his sermons. Here is what he writes to the editors: "Tell Grandpa Root not to be too hard on M.-A.-O., for his lost 'extracter' handle story. I have had one sermon out of it already — subject, 'The Other Fellow's Viewpoint.' I am working on another one —subject, 'The Lost Coin, or the Pearl of Great Price.' " I guess that'll put the terminal binger on 'em and make 'em all get off, won't it? Or, as the vulgar populace would say, "I guess that will hold 'em for awhile."

* * *

I'll bet Job had been trying to conduct an "Around-the-Office" column in Gleanings in Camel Culture, published at Uz, Chaldea, when he let out that groan about wanting to hit into a place where "the wicked cease from troubling and the weary be at rest." It just seems to lose a man all his friends, and he probably said that right after everybody had gone back on him and when the cabbage worms were likely at their worst. I know about it. I am right-there-Eli today myself. The last friend to desert was the old family cat, this morning. She was purring away in my lap as I sat recuperating after the regular six A. M. cabbage-worm battle in my garden, whereby I and my nervous system were being greatly soothed, when she suddenly rose up William Riley in a XXX triple-plated fit. It was the greatest all-around fit, in many respects, I have ever seen fitted onto a cat. The first thing I noticed, or thought I noticed, was that she departed. She seemed to leave via my left chest region, left shoulder, left ear and left side head top. Any way, her general direction was upwards in a hurry. How I know mostly is that

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A KIND WORD TO M.-A.-O. FROM OUR LONG TIME FRIEND, IRVING KECK.

I have just read your contribution to the August Gleanings. I am glad you have decided not to be bounced. I have been an interested reader of Gleanings for over 30 years, and have visited A. I. in his home at Bradentown, and have had him in my home here, so I know something of Uncle Amos and his peculiarities. The younger Roots I have not met, but among you I imagine Uncle Amos is needed to keep a steady rein on the colts of the establishment. I have just read the July issue also, about Uncle Amos looking at the robust figure of the lady with the developer to sell. It was the cause of a very broad grin in this household. But may Uncle Amos ride many more hobbies, and may one of them be to keep "M.-A.-O." in Gleanings

Bowling Green, Fla., Aug. 22. Irving Keck.

"HOW TO BE HAPPY."

Dear Brother Root:—Your splendid little tract, "How to be Happy when People Abuse You," hit me where I live. It has done me much good in showing me *myself*. May its good work go on! I want to use about twenty-five of these if you will send them to me.

Hancock, Ia., Sept. 2. Harry W. Hansen.

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wherever she directed her feetsteps I found later about four good substantial cat toe-nail abrasions per step each, and these were all along my upper left-side region. She was evidently nervous and careless. Where she got her flying start seemed to be at the clean top of me, for later investigation went to show that she braced herself there to try to break the cat long-jump record, and thoughtlessly didn't think where she was. Probably she was trying to do the best she could under the circumstances, but, in securing the largest purchase and forward propulsion of her hind legs possible, she seems to have slipped backward about one and one-half inches before she thought to take her toe nails out of the left auricular procranial area of my scalp. That incident led me to arise enthusiastically and take in further proceedings standing up. Right here I must pause to say that I can't go into details as I would like to do, for there wasn't time to get them. As best I can recall subsequent stirring events, after arising I tried first to get a glimpse of dear old pussy. If I had started to revolve in the opposite direction from which she was then earnestly, uninterruptedly and tumultuously touring around and around my palatial study, I might have got one flash of cat per revolution. But I didn't have that luck. I started revolving the same way she was en route, and my line of vision never did catch up. But this isn't saying it was not interesting—every second of it. Things began flying early and kept coming continuously and increasingly. So I knew kitty was probably doing about her level best in the speed line on a four side track. About the thirty-ninth merry-go-round I got so dizzy that things fogged up, and I had to slow down. Along just about that time then (I am not clear on the order of events) the worst and also noisiest eruption of the occasion drowned out the sound of 'most all the other things flying in the room at that date—and my poor, long-suffering, patient wife's face appeared at the door. Awful—worser than you know of yet—a ——— (censored) sight! For hadn't I, just the day before, after a whole spring and summer of wily persuasion, got wife to let me bring her little mahogany-on-wheels tea-service table into my room with the globe of gold fish on it? I had. Hadn't I promised not to put even a pin down on the precious, delicate thing? I had. Hadn't I promised to pick it up, successfully balance the fish globe on it, not spill a drop of water, and rush it back on display in the dining-room every time the doorbell rang? I had. Now then! Do you think that kitty missed that precious little tea-wee table? Not on your life she didn't. That was the cause of the biggest of all eruptions just mentioned above. She hit it square amidships when she did get around to it, too. Remember, I didn't see her do it, but I think she did

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Around the Office—Continued

something of the kind, for when I hurriedly left the house an hour ago, one leg, two wheels and one support of that wootsie tootsie little table were rent asunder, the fish globe was leaking considerably and my crying little ones were trying to salvage the gold fish out of the hot-air register with a pop-corn popper. What was left whole and self-composed and natural in that room was what was above high-cat-jump mark. Also when my wife wasn't choked up too much with grief she was conversing with me about that cute little table. ''Forget it!'' I told her. But her forgetter did not seem to be working well, so I came away.

* * *

Now, while I don't want any of you to think that in giving you the above-mentioned important data I was wandering away from the main subject of Job as a journalist, yet I wish to ''embalm in the liquid amber of my remarks'' one more remarkable incident of the epochal happenings of an hour ago at my home. With the cat tracks on the upper left-hand side of my torso, neck, ear and head still redhot, and the sound of the dissolving little tea-table, fish-globe and wife still ringing in my ears, I rejoice in one memory of it. It shines forth as the one bit of silver lining on the whole dark cloud. The fact is, kitty made one very bad tactical error just before leaving me forever—that is, I think she did and I think she thinks so now. You see I contracted, years ago, the habit of fishing. It has become perniciously chronic. I have contracted the further bad habit when coming in from the creek of putting my wet fishing line, hook and all, on the foot of my Persian divan to dry. This plan also avoids the labor of putting it up. It likewise makes my closest relative by marriage mad. It furthermore makes the foot of my divan shunned and greatly respected by callers during the entire fishing season and so keeps it from wearing out. Well, dear old kitty in her last round of circular research for bric-a-brac and other obstacles in my room to surmount, thoughtlessly decided on a trial trip up over and across the foot of my Persian piece-de-resistance of furniture, and the principal results must have come fully up to her fondest expectations. I couldn't see her, of course. No one could. She was full steam ahead and the safety valve tied down when she undertook the enterprise. But it seems she got attached to something immediately upon arriving on the foot of the divan. Perhaps, now, that is untrue and does her an injustice. Something may have got attached to her. I don't know. But between them they worked up about the strongest case of attachment I have ever seen—no, I mean, heard. Her part of the attachment was somewhere posteriorly, and it seemed to change her thought and entire plan of campaign almost immediately. Apparently, a truly great enthusiasm for break-

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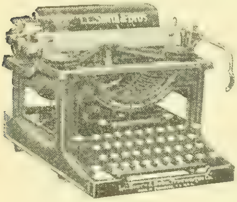

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Around the Office—Continued

ing all previous cat speed records (including her own just made) and getting into a wider field of operations, seized her exactly contemporaneously with her new-formed attachment. They started off together, anyway, taking the fish line and my old bass reel along with them. She was ahead, of course, and picked the trail. The rest started about the same time. Her interest in temporal things in my room seemed to wane completely and simultaneously, and she made a bee line (that's the point where this article touches on apiculture) for the nearest window. The wire screen didn't check her up a bit, altho it did about three-fourths of her fur. That's in my room on the inside of the screen yet. If she figured on leaving anything hurtful to her feelings on the interior side of that window screen she guessed wrong. A No. 2 bass hook in man meat or cat muscle is justly famous for staying on the job, and a 40-pound test No. D bass line, aided and abetted by a No. 2 bass hook on which a cat has heedlessly sat down, will follow faithfully along behind a cat considerably longer than most cats think—and keep a well-made reel coming along too. Well, kitty never faltered, once out in the wide wide world, and as she went around the corner of the house the reel hopped out thru the hole in the screen, going 78½ miles an hour and about 30 feet subsequently to the head of the procession. So they were off together, headed straight for my poor little tubercular garden. No garden could stand it—not even Mr. A. I. Root's nor Stancy Puerden's. Dear old kitty herself cleared my horticultural estate in about one and one-third jump. But the confounded reel caught on the first bean pole, the line held and swung that cat clean around over my late fall Chinese radish and purple-topped turnip beds, and d-r-n-d (censored some) if the line didn't saw off every last one of them! Never faltering, she started a new campaign up thru my late tomatoes. You never in your life saw a cat so set on a constant change of scenery as she was. First, late radish and turnip landscape, then tomato scenery for her. Her tail was straight out and horizontal-like, bigger'n a ball bat, and her eyes seemed set on Pike's Peak or further west. She was gaited a sort of go-as-you-please-but-hurry-along-cat-record-free-for-all run. I can't trust myself now to speak further of my late tomatoes, but kitty got thru and on

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Around the Office – Continued

top of as many of them as she didn't get snarled up in the fish line, and set all sail with them and one bean pole down the middle of the street on which I live, a modest and generally law-abiding citizen. The tomato patch she had taken on, together with the bean pole, slowed her up a little by this time, and the neighbors could see it was my cat. So it happened that the last thing I just now saw on the street was a female uprising of my neighbor folks, and old Mother Stickin, secretary of the local Society of Prevention of Cruelty to Animals, pawing the air and shouting: "Horrid brute to 'can' that poor innocent cat that way—I'll teach him, so I will!" Think of it!! All that on top of the true condition of affairs in my home, garden and wife! Why shouldn't Job and I sit down side by side and cry out for a place where "the wicked cease from troubling and the weary be at rest?" We should. And why isn't the way of the man who writes "Around-the-Office" hard? It is hard—this article proves it. (P. S.—Benny Peters, a neighbor boy, has just come in to my editorial palace with what he says he thinks is my fishing tackle; for Benny keeps track of fishing tackle in this neighborhood. The hook had about a half ounce of pink fresh meat on it, and he says the other end of the line was tangled on a bean pole that was stuck fast in their front gate. He says he doesn't know who baited the hook that way, tho.) (Later. —From one-third to four-fifths of this story is true and I can prove it.)

* * *

If the close and compact reasoning submitted above has not convinced the reader why Job in his era and I in mine regard the conducting of an "Around the Office" column as a friend-losing business, then here's more evidence. In the September Gleanings, so good a man as Mr. A. I. Root gets on my trail for the way I reported his method of routing squash bugs in whole battallions by putting squshed bugs on the leaves. He avers that "a very determined hand-picking" was in the recipe and that I suppressed this important element in giving directions for wholesale decimation of squash bugs by fright. I knew of the "very determined hand-picking" method quite early in life, but was always some short on determination in the matter, and so welcomed the squshed-bug-on-the-leaf discovery almost wildly—as I would any other sure promoter of leisure. Now, while I don't want to get "Uncle Amos" hostile to me, I can't help wondering if, as he says, victory in the squash and melon patch comes only with a "hand-picking" every few hours along with the squshed-bug-on-the-leaf practice, how a fellow can tell whether both parts of the recipe are working full up. I left hard labor out of it and hain't got any squash vines and hain't had since about July 1. So I got it into my thick head that the squshed-bug part of that recipe might not always be working, or might be intermittent. But "Uncle Amos" wasn't mean about it—he never is about anything. It's Stancy Puerden in her food page that wants to twit on facts, and that isn't considered gentlemanly. She wants to know about my early potatoes and my calling in the neighbors to see the first tremendous ones dug. She knows that's mean, for everybody around here is now fully apprised of the fact that I had early potato vines fully five feet high, and that when I called in a few neighbors to witness the ceremony of taking a peck out of each hill, there was nary a potato in the whole dumfudded patch—all gone to tops. I merely said: "Why, isn't that strange and also real disappointing! Dear me!" That's what I said while the Roots and other nice neighbors were present. When I had dismissed the meeting, I had a real heart-to-heart talk with that potato patch with some satisfying language. Did you, A. I. Root, ever know that you could get a potato patch so rich and full of humus and wood ashes that it would grow nothing but tops and remorse? Well, it's so. But, I want to tell Stancy Puerden that I wouldn't get all puffed up and blow and brag about early potatoes that I had to start in a box in the house, rock in a cradle, feed on a bottle, tuck under blankets nights and take out on warm days in a perambulator. No, I wouldn't. I would either raise a manly, independent, frank, open-faced, outdoor potato, or I would conceal the fact from the public forevermore—much less go around blowing about it the way you have done in Gleanings. Take that, will you? But, on further reflection, I guess I'll try it myself next spring.

* * *

Speaking of gardening, leads me on to another apicultural subject—the cabbage worm. I refer to the very common, green, elongated, pusillanimous, ultra-numerous, dumfudded, hoggish, polylegged, industrious child of the common yellow butterfly. He's what you'd call a binger on the cabbage game. I wish the Roots would let me discuss him here with the fervor that the subject deserves. I am full of it. For a month now I have arisen with the sun every morning and have gone out into my garden and looked down into the open, pleading faces of my poor cabbage with commingled feelings of pity, rage and revenge. Then I have stepped to it. I guess I have. While the cabbage worm isn't really gamey and his mental processes are apparently slow, there is considerable satisfaction in the pursuit of him. I think I get the most out of it by pulling him into two parts by slow tractile force applied at both ends. I have a feeling that that modus operandi makes him more regretful that he's a cabbage worm than almost anything else I can do. It brings out about all that's in him, too, and that's what you should do in all the affairs of life. If I have to dig into the very heart of the poor cabbage head, to overtake my game, I am so wrought up when I have got him that I pause, generally squeeze off only one end of him (as being somewhat more disciplinary and corrective), then I interrogate him as to whether he expects to be here for Christmas. Of course, that's just sarcasm, for a cabbage worm with one end squoze off can't be expected to answer questions about where he expects to spend next Christmas. But you have got to hand it to the cabbage worm for one or two details, tho. He always wears his green suit when dining on cabbage, doesn't rush panicly about and keeps quite still when hostile man approaches. You reflect a moment and you will see that shows protective color strategy and composure in the presence of the enemy. His worst oversight is in not covering up his tracks. They are easily identified, being always round or spherical, and my tip to you for successful pursuit of him is to hunt above the trail. Never mind the wind as you do when hunting deer, for C. W.'s sense of smell doesn't seem acute. (P. S.—If you ever have the high-gear speed and rare luck to catch one of the suskalooted-cabbage-worm-egg-laying butterflies, after running one lung out of yourself, abolish one of her wings, then the other wing, then delete her legs one at a time seriatim, biff her in the left eye, and ask her how she likes it. I think it will relieve you a lot. I know it does me.)

* * *

Some anonymous sunofagon out in Indiana the other day wrote to "Man-Around-the-Office" (M.-A.-O.), care of the A. I. Root Co., Medina, O., and every blessed thing there was in his letter was this: "Why don't you even once in awhile get a little sense into 'Around the Office'?" Yes, sir, on top of all my other troubles, not to mention squash bugs, cabbage worms and pigeon grass in my garden, he shot that one into me. Of course, all of the Roots saw it before I did, and it didn't tend toward any salary boost for me. If he'd a signed his name, I'd a sent him a letter that would have needed an asbestos mail pouch to have carried it, so I would. I'd have told him as what sort of varmit I regarded him and wound up by calling him a cabbage worm. But cooling off a little and on reflection, perhaps he's entitled to know if I have got a specimen of sense on hand. So I am going to try this one on him for judgment: Living at this very hour down in a town in central Ohio is a beekeeper, who thinks he's a business whale. So he has to sell his honey the way Heinz sells his 57 kinds. Year after year, he buys bottles, bottles it, buys labels and labels it, hauls it two miles to market and sells it from his wagon retail per lb. at a less figure than he could sell it in 60-lb. cans at his door,—and owes debts all over town. It was exactly that beekeeper sort about whom Solomon, when his attention was called to it, remarked right off hand that "there is more hope of a dingbinged fool than of him." (Translators expurgated one word in the King James version). Now you anonymous Indiana scrummudgeon, is there any sense in that or ain't there? Do Solomon and I know what we are talking about or don't we? Did Solomon ever agree with you about anything as he does with me on this point? I wot not.

* * *

That bee-moths are very like a good many naughty people who know what they are after and go to it, and that bees are very like a good many good people who know what is wrong but don't know how to put the binger on it, is illustrated by the following observation sent by Mr. E. J. Ladd of Portland, Ore.: "Did you ever see moths attempt to get into a strong colony? Moths are very plentiful this season with us and at nightfall literally make attacks on the bees to get by the entrance. Have watched them practice their tactics as long and late as they could be seen. Apparently fearless, they light on the bees clustered outside and hurriedly try to pass. This scrambling to get by seems to excite and cause the bees to become flurried and instead of attacking the moths they begin to run around promiscuously in all directions. The busy moths seem to take desperate chances, pushing and dodging thru the entrance and the demoralized bees seem so badly rattled as to lose their fighting qualities. Whether there will be an extra crop of wormy combs time alone will tell, but at present indications point that way.''

* * *

Mr. F. L. Gaines of Greenfield, Mass., sends this one along to be embalmed in the ''Around the Office'' column: ''On page 574 of July Gleanings the man who had 'combed honey' for sale reminds me of one of my 'Down-East' honey customers. One day he came to me and asked: 'Say, you got any more of that extract of honey?' Upon learning that I had plenty, he replied: ''Wal, fetch me daoun some.''

* * *

A. E. Crandall of Berlin, Conn., recently sent to the Gleanings' office in a queen mailing cage a specimen of the spider family on a slip of goldenrod on which a bee had been killed by this spider. It was a crab spider, and yellow as was the blossom it was on. There is a white variety that lies in wait for bees on white blossoms. The crab spider spins no entrapping web, but with arms outspread and concealed by its color awaits the coming of its victim, the bee, and by a swift movement grapples it in a death embrace. I hardly need to arise and remark that he is one of the orneriest little pukes on earth. He is so ——— (censored) tough that a bee can't sting into him. There was one rather pleasing thing, tho, about the spider that Crandall sent us—that was the pin it had sticking straight thru its abdomen. It looked fully as painful as any pin.

KIND WORDS

"GATHER UP THE FRAGMENTS:" A FEW KIND WORDS AND SOMETHING MORE.

Mr. A. I. Root:—I have just been reading Our Homes for July, and it so coincided with the instructions of our community for the past 100 years that I could not forbear dropping you a line of congratulation. I always turn to that part of GLEANINGS, for it is so practical.

In a late paper telling the women what to do for their country they were advised "to preach the gospel of the clean plate." This we have preached as well as practiced at the risk sometimes of ridicule, and I am sending you a little book, "Juvenile Guide," in which, on page 111, you will find the gist of Our Homes in said issue of GLEANINGS. This little book was written by our people, with selections by the best authors on the best of subjects for the guidance and culture of the youth and children of our community. The poem mentioned was often framed for our dining-room.

AMELIA J. CALVER.

Mt. Lebanon, N. Y., Aug. 2.

Permit me to add that the little book, "Juvenile Guide; or, Manual of Good Manners," was published in 1844, especially for the youth of that date; and I heartily believe that such a book just now, to be read by young and old, would be a blessing to the world. Below is the poem mentioned:

TABLE MONITOR.

Gather up the fragments that remain, that nothing be lost.—CHRIST.

Here then is the pattern which Jesus has set;
And his good example we cannot forget:
With thanks for his blessings his word we'll obey;
But on this occasion we've something to say.

We wish to speak plainly and use no deceit;
We like to see fragments left wholesome and neat.
To customs and fashions we make no pretense;
Yet think we can tell what belongs to good sense.

What we deem good order, we're willing to state;
Eat hearty and decent, and clear out our plate:
Be thankful to heaven for what we receive,
And not make a mixture or compound to leave.

We find of those bounties which heaven does give,
That some live to eat, and that some eat to live—
That some think of nothing but pleasing the taste,
And care very little how much they do waste.

Though heaven has bless'd us with plenty of food:
Bread, butter, and honey, and all that is good:
We loathe to see mixtures where gentle folks dine,
Which scarcely look fit for the poultry or swine.

We often find left on the same china dish,
Meat, applesauce, pickle, brown bread, and mixed fish,
Another's replenish'd with butter and cheese,
With pie, cake, and toast, perhaps, added to these.

Now if any virtue in this can be shown
By peasant, by lawyer, or king on the throne,
We freely will forfeit whatever we've said,
And call it a virtue to waste meat and bread.

Let none be offended at what we here say;
We candidly ask you, is that the best way?
If not, lay such customs and fashions aside,
And take this monition henceforth for your guide.

THE "BEE BUCK," AND SOME KIND WORDS FOR THE SMALL SAMPLE OF BEAUTIFUL CALIFORNIA HONEY.

Dear Friends:—Good morning! I am sending you a sample of honey I produced—or, rather, the bees did under my instructions. Ask dear Mr. A. I. R. and Dr. C. C. M. if they ever saw any nicer. I have one swarm, or colony, I guess you call them, that has filled four ten-frame supers to date, and I believe they will fill two more before the season is over. Isn't that pretty good? I might add that I am an Ohio boy from Meigs Co., or I *was* a boy in the early seventies; and that reminds me of discussing the merits of A. I. Root's bee-book with a distant relative of Will C. Carleton—Will L. Carleton by name. He was telling something about it, and called it A. I. Root's "bee Buck," and from that day to this he goes by the name of "Bee Buck."

I hope the blessed Master will continue his blessings on you all, and give you your portion of his spiritual happiness.

My good brother A. I., I have read your Home department with much interest, and hope you may live many years to continue the good work.

Orcutt, Cal., June 6. C. E. DILLINGER.

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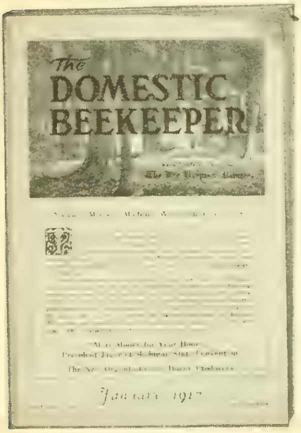

The DOMESTIC BEEKEEPER

January 1917

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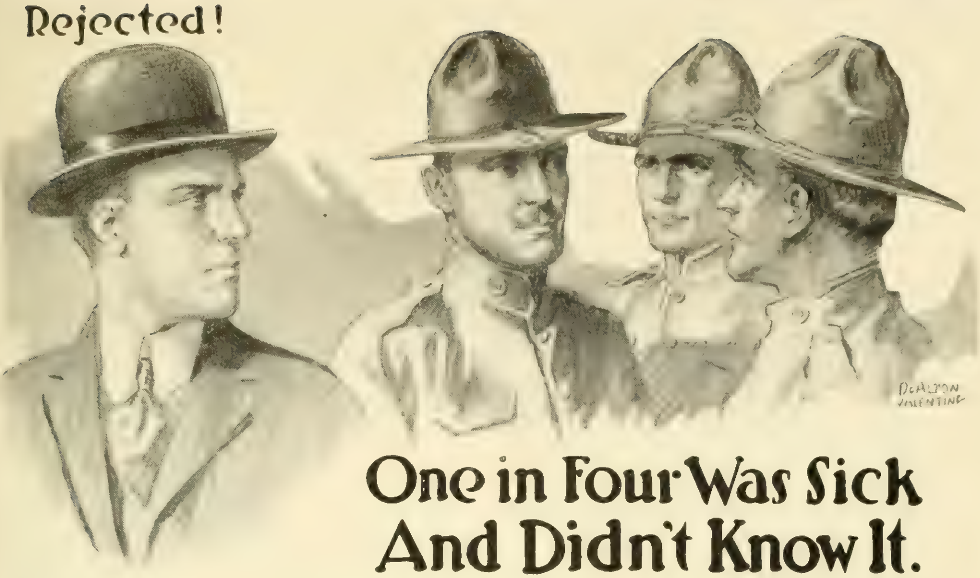

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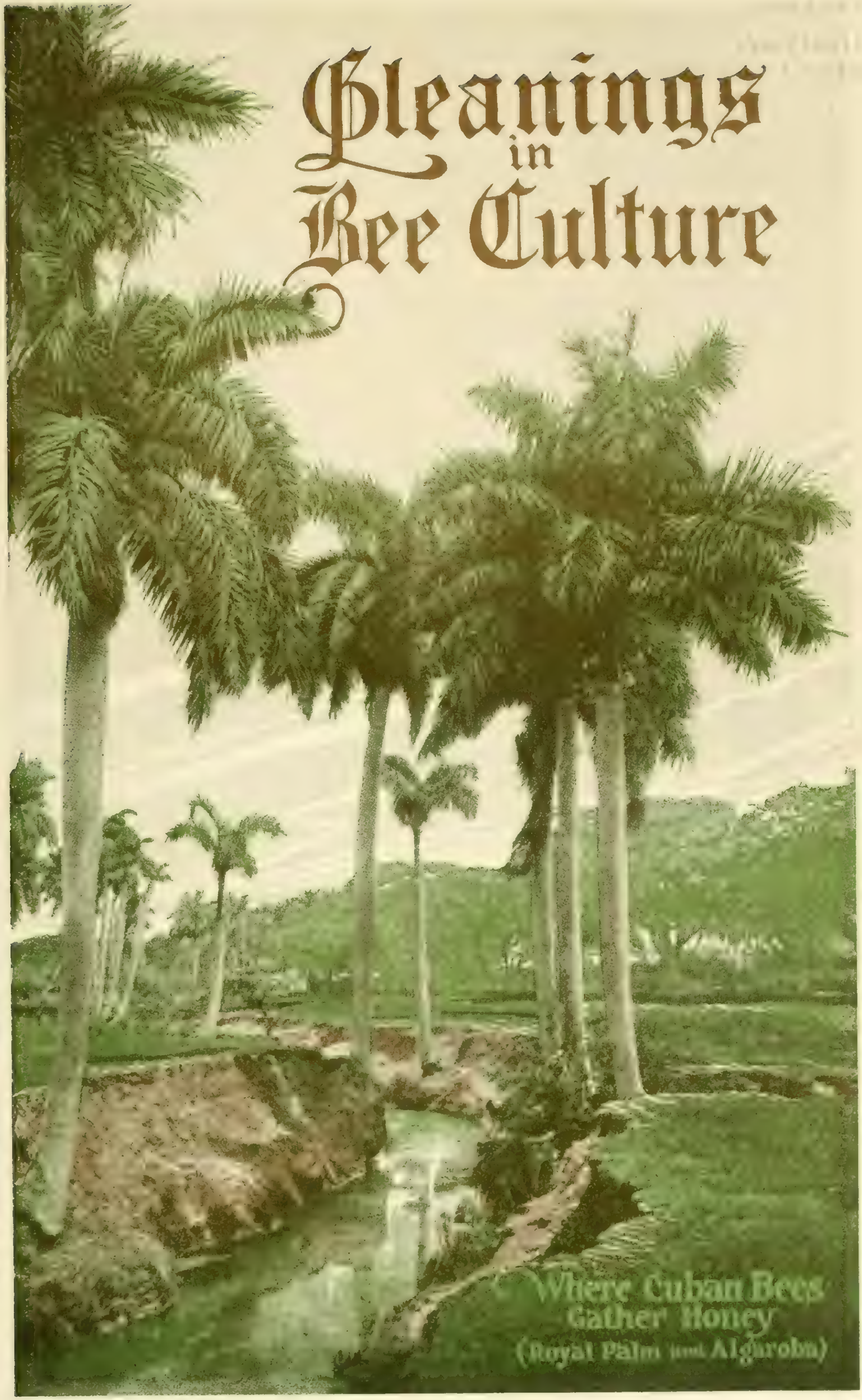

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CONTENTS

NOVEMBER 1917

Editorial		829-832
Queen Rearing Troubles	The Editors	833-836
Wintering in Florida and in Indiana	J. H. Collins	836
Florida, the Place to Live	Jacob Alpaugh	838
Management of 300 Yards	Leslie Burr	839
Cheap Winter Packing	E. R. Root	842
Conversations with Doolittle	G. M. Doolittle	844
Letters from a Beekeeper's Wife	"Mary"	845
Sowing Sweet Clover with Wheat or Oats	Frank Coverdale	846
Moving Bees by Motor Truck	Harry A. Huff	847
Notes With and Without Interest	J. M. Buchanan	847
Motoring Thru California	W. A. Pryal	848
Advantages of Shallow Frames	A. W. Finley	849
Shallow Frames Reduce Labor	W. A. Chrysler	850
Beekeeping as a Side Line	Grace Allen	851
Siftings	J. E. Crane	853
Stray Straws	Dr. C. C. Miller	854
Our Food Page	Stancy Puerden	856
Beginners' Lessons	H. H. Root	858
Gleaned by Asking	E. R. Root	860
Heads of Grain		862-867
Mother Bee Nursery Rhymes	"M. G. P."	868
Gleanings from North, South, East and West	Department Editors	869-874
Just News	The Editors	875-878
Our Homes, Gardening, Temperance	A. I. Root	879
Man Around the Office	M. A. O.	adv. pages

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2146 Central Avenue

HONEY MARKETS

The price of honey is what the owner of it can get. We do not know how better to put the situation of the honey market today than by just that statement. The previous uncertainty of price is increased by the unprecedented shortage of sugar that now prevails. This shortage will undoubtedly increase the demand for honey, and that demand even heretofore has been greater than the supply. It seems probable now that the retail price limit will be set by the acuteness of the sugar shortage, for there are present restrictions on the amount of sugar sales to everybody and anybody, but no restrictions on the amount of honey that any one person, firm, or corporation may buy. If the demand for sweets and sweetening materials becomes acute enough, what price may honey not reach? We don't know, nor does anybody else. Of course, there can be a price at which nobody will buy. This situation suggests that holders of comparatively small crops of honey, at least, should try to sell retail—to the consumer direct, for such customers will be easy to find, and the price need not and should not be cut below the prevailing retail prices of the local storekeeper, and that is high.

Take the honey market conditions in a typical section of the white-clover region—central New York. One of the foremost beekeepers there writes us under date of Oct. 21 that there is very little honey on the market or in the hands of producers, and that he knows of only 4000 lbs. of buckwheat extracted honey, and this is held at 12 cts. at shipping-point. No. 1 white comb is $4 per case, and No. 2 mixed comb is held there at $3.25 a case at shipping-point.

We print below the prices as quoted us by wholesale dealers in cities. We also print the U. S. Government market report, date of Sept. 29. We have not received a later quotation from Washington, as we generally do—perhaps because of the great press of work in the Government printing-office, due to the sale of the second Liberty Loan.

At such a juncture in the honey market as this, we sincerely hope for the day when honey will be considered a food staple, and quoted in the general food markets daily—just as butter and eggs and sugar are quoted. With the aid of clear-headed honey-producers and business-like honey-producers' associations, together with big honey-packers, this day is drawing nearer—a day that will benefit every beekeeper.

General Quotations of Wholesalers.

CHICAGO.—The market has been active, receipts being taken upon arrival, so that there has been no accumulation of either the high or low grades. Fancy and A1 grades of comb honey are selling at 22 to 23 cts. per lb.; No. 1 at 20 to 21. No ambers have been offered, but would bring within 1 to 3 cts. per lb. of the white grades. Extracted clover is selling freely at 15, with clover and basswood bringing the same price, whether individual or blended. Different amber grades are from 1 to 5 cts. per lb. less according to color, flavor, and body. Barrels bring within 1c per lb. of that in the five-gallon cans. Beeswax is without material change, bringing from 35 to 37c per lb., according to color and cleanliness.
R. A. Burnett & Co.
Chicago, Oct. 17.

ST. LOUIS.—Comb honey is only in moderate demand, as trade here regards prices as extremely high. Stocks here are also very light, as local comb honey has not yet appeared on this market. Extracted honey is in fair demand, and supply quite ample. The following quotations are what we are getting from the retail trade, and not what we are offering producers: Comb honey, extra fancy, per case, $4.75; fancy, $4.50; No. 1, $4.00; No. 2, $3.50. Extracted honey, white, per lb., brings 15 cts.; light amber, in cans, 13; amber, in cans, 12, and in barrels 11. Clean average yellow beeswax brings 37 cts.
R. Hartman Produce Co.
St. Louis, Mo., Oct. 18.

PORTLAND.—Comb honey is coming in very slowly and is in good demand. For some reason the producer is not marketing comb honey as early as in former years. Freight rates in many instances make it prohibitive being double first-class in L. C. L. Extracted is coming in more freely; but prices being very high naturally restrict consumption. Quality of both comb and extracted is very good. We quote comb honey, fancy, $4.00; No. 1, $3.75; No. 2, $3.50. Extracted honey, white, per lb. brings 15; light amber, in cans, 14; amber, in cans, 13. Beeswax, clean average yellow, brings 30 to 32 cts.
Pacific Honey Co.
Portland, Ore., Oct. 12.

SAN FRANCISCO.—Extracted honey of all description is moving out splendidly, altho the local demand is slow. Only liquid honey attracts jobbers, but for export it makes no difference if granulated or not. Hawaiian honey is in more free supply, but on account of the general run always being packed in second-hand containers, and so presenting a rather uninviting appearance, it does not receive the attention that other grades of honey do. We quote the following prices to jobbers: Comb honey, fancy, per case, $3.50 to $3.60; No. 1, $3.00 to 3.25; No. 2, $2.50 to $2.75. Extracted honey, white, per lb., 13½ to 14; light amber, in cans, 12 to 13; amber, in cans, 10 to 11. Hawaiian 9 and 10c in 5-gal. tins. Beeswax, clean average yellow, per lb., 33 to 36c.
Leutzinger & Lane.
San Francisco, Cal., Oct. 17.

LOS ANGELES.—Very little honey in stock here. There is a heavy demand for amber and light amber—not so heavy for white. Comb honey is just coming into this market. High prices lessen demand. We quote comb honey, fancy, per case, $4.50; No. 1, $4.25; No. 2, $4.00. Extracted honey, white, per lb., brings 15 cts.; light amber, in cans, 13; amber, in cans, 12. Beeswax, clean average yellow, brings 40 cts.
Los Angeles, Cal., Oct. 17.

DENVER.—We are at present selling new honey to retailers at the following prices. No. 1 white comb honey, per case of 24 sections, $4.50; No. 2 at $4.00. Extracted white, according to quantity, 15 to 16; light amber, 14 to 15. We are buying beeswax at all times, and are at present paying 38 cts. in cash and 40 in trade for clean yellow wax delivered here.
The Colorado Honey Producers' Association.
Denver, Col., Oct. 17.

KANSAS CITY.—Demand is moderate. Receipts are slightly heavier, and prices a little lower. We quote comb honey, No. 1, per case, $4.25; No. 2, $4.10. Extracted honey, white, per lb., brings 15 cts.; light amber, in cans, 14; amber, in cans, 12 to 13. Beeswax, clean average yellow, brings 40 cts.
C. C. Clemons Produce Co.
Kansas City, Mo., Oct. 17.

SYRACUSE.—The situation of the market is about the same as it was at last month's quotation. We think honey is being consumed more as the season advances. We quote comb honey, extra fancy, per case, $4.80; fancy, $4.32; No. 1, $4.00; No. 2, $3.60. Extracted honey, white, per lb., brings 15 cts.; light amber, in cans, 13; amber, in cans, 11.
E. B. Ross.
Syracuse, N. Y., Oct. 16.

BUFFALO.—Supplies are very light. Not much is offered. Prices are fairly firm at following quotations: Comb honey, fancy clover, per lb., 22 cts.; extracted honey, white, per lb., brings 15.
Buffalo, N. Y., Oct. 16. Gleason & Lansing.

PITTSBURG.—No improvement in demand as yet. We expect that trade will open up within the next few weeks. We quote comb honey, extra fancy, per case, $4.00; fancy, $3.75; No. 1, $3.50.
Pittsburg, Pa., Oct. 19. W. E. Osborn Co.

CLEVELAND.—Demand is improving, not very active. Supply is only moderate. Comb honey does not appear to be as uniform in appearance as at other seasons. We quote: comb honey, extra fancy, per case, $5.25; fancy, $4.75 to $5.00; No. 1, $4.50.
Cleveland, O., Oct. 18. C. Chandler's Sons.

BOSTON.—Demand good; supply difficult to get. The quality of extracted is as good as we have ever had. Comb is fancy. We quote comb honey, extra fancy, per case, $4.50; No. 1, $4.00. Extracted honey, white, per lb., 18 cts. in cans; light amber, in cans, 16. Blake-Lee Co.
Boston, Mass., Oct. 18.

TORONTO.—The crop of honey was nearly 50 per cent below the normal, and prices ruling now are the highest known for years. Stocks in the hands of the producers are practically exhausted. Pure white-clover honey in five and ten pound tins is selling to the retail trade at 19 cts. per pound. Honey in glass is almost off the market.
Toronto, Oct. 17. Eby-Blain Limited.

MONTREAL.—There is a good demand for all lines of honey. Stock on spot is small; big consumption among the country trade. This holds honey back from the city. We quote comb honey, extra fancy, 21 cts.; fancy, 20; No. 1, 18; No. 2, 16. Extracted honey, white, per lb., brings 16 cts.; light amber, in cans, 15, and in barrels 14; amber, in cans, 14, and in barrels 13½.
Montreal, Oct. 16. Gunn, Langlois & Co., Ltd.

HAMILTON.—Honey is selling well. Only small shipments are coming forward. Sample is good. We quote comb honey, extra fancy per case of 15 sections, $4.00; fancy, and No. 1 and No. 2, none in market. Extracted honey, white, per lb., brings in 60-lb. tins, 17 cts.; in light amber 10-lb. tins, 18; and amber, none in market. No beeswax is offered.
Hamilton, Ont., Oct. 16. F. W. Fearman Co.

MATANZAS.—Extracted honey, light amber, in barrels, $1.30 cts. per gallon; amber, in barrels, $1.30. Beeswax, clean average yellow, brings per lb. 38 cts. A. Marzol.
Matanzas, Cuba, Oct. 13.

LIVERPOOL.—The beeswax market is steady. Of Chilian, 30 bags have been sold at $52.10 to $53.35 from store. Honey is in good demand at steady prices. Sales of 800 barrels have been made. We quote Chilian at $22.20 to $22.80 per 100 lbs., pile X; $21.60 to $21.84 for pile 1; $19.68 to $19.92 for pile 2; $19.20 to $19.44 for pile 3; $15.60 to $16.80, no pile. Of Haiti, 195 barrels were sold at $20.40 to $24.84; of Argentine 50 barrels at $18.12 to $19.20; of Californian, 500 cases at $25.20; of Jamaica, 305 barrels at $20.04 to $22.80.
Liverpool, Oct. 4. Taylor & Co.

U. S. Government Market Report.

This is the eighth of a series of similar reports, dated Sept. 29, issued by this Bureau of Markets on the first and fifteenth of each month during the honey-shipping season. The information is secured by representatives of the Bureau located in the markets, and is transmitted to Washington by wire. For the present the bulletins will be issued only from Washington. These bulletins will be sent by mail free to any person requesting them. All inquiries should be addressed to Charles J. Brand, Chief.

Less-than-car-lot prices on large lots to jobbers:

Cincinnati.—Arrivals, 1 car Wisconsin comb; 5 barrels and 6 cases Iowa; 28 cases Michigan; 10 cases Alabama; 1 barrel and 9 crates Kentucky; nearby receipts are light; demand good, market very strong, movement moderate on account of high prices. Extracted honey, light amber, 15 cts.; orange and white sage, 17. Comb honey, fancy white, heavy, $4.75; No. 1, white heavy, $4.50 per 24-section case.

St. Louis.—Extracted honey, Southern light amber, in barrels, 11½ to 12 cts. per pound; in cans, 12 to 12½. Beeswax, light supplies, 36 to 37 cts. per pound. Honey arrivals—1 car Porto Rico and moderate L. C. L. Southern.

Minneapolis.—Light local receipts; no rail arrivals; demand and movement slow, market steady. Colorado—white comb honey, 24-section cases, $4 00 to $4.25; extracted honey, white, in 60-lb. cans, mostly 14 cts. per pound. Minnesota, comb honey, 24-section cases, fancy, mostly 18 cts., choice, mostly 16 to 17 cts. per section. Extracted honey, white, in 5 and 10 lb. pails, mostly 15 to 16 cts. per pound. Beeswax, no sales reported.

St. Paul.—Arrivals, approximately 700 cases Minnesota comb, 10 cans extracted and 2 barrels; approximately 1020 lbs. mixed comb and extracted from Wisconsin, 1 car from Ohio, mostly extracted and light local comb receipts. Demand is moderate, market firm. Minnesota and Wisconsin—white comb, 24-section cases, 18 to 19 cts. per section; extra fancy, small lots, 20 cts. per section; no sales of extracted honey reported. Beeswax, no sales reported.

Chicago. — No carlot arrivals; receipts from nearby states very light. Demand is active, market strong. Comb honey, white clover, fancy, mostly 22 cts. per pound; No. 1, 20 to 21. Extracted honey, fancy white clover and basswood, mostly 15; other stock, 13½ to 14½. Extracted honey, California, practically cleaned up; no sales reported. Beeswax, 35 to 38 cts. per pound according to purity.

Denver. — Arrivals, approximately 3500 cases white comb and 60,000 lbs. white to light amber extracted. Demand and movement moderate for comb; demand light, movement draggy for extracted honey; market firm. Quality and condition generally good. White comb honey, firsts, $4.05 per 24-section case; seconds, $3.60. Extracted honey, white to light amber, 14½ to 15. Beeswax receipts very light; price to producer, 34 cts. per pound.

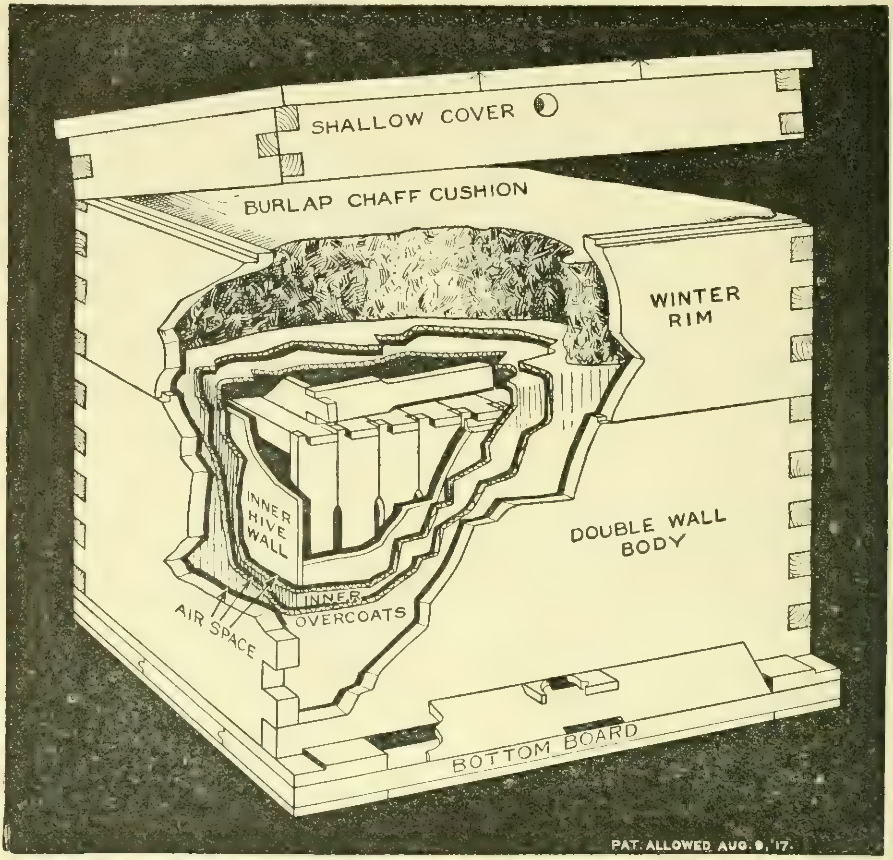
Philadelphia.—Arrivals, 300 cases and 35 kegs extracted, approximately 1200 cases comb, all from New York state; approximatetly 100 cases local comb; no imported stock arrived. Demand moderate, market steady. Few sales Southern extracted; amber, 11 to 11½. New York, quality only fair; very few sales of mixed grades; light amber to white, 19. Beeswax, demand slow, market steady; 37 to 38 cts. per pound.

New York.—Arrivals, 1 car California, 5 barrels Florida, 15 barrels Key West, 9 barrels Texas, 39 half-barrels Texas, 408 barrels Porto Rico, 871 barrels Santo Domingo, 216 barrels Cuban, 30 cases British Honduras. Market fair, demand moderate. Extracted honey, West Indian, $1.25 to $1.50, mostly $1.35 to $1.40 per gallon; California, dark, 12½ to 13 cts. per pound; light, 14 to 14½. Comb honey, per 12 sections, $3.00; export, demand slow; market quiet; no prices reported. Beeswax arrivals, 328 packages Cuba, 421 packages Santo Domingo. Market quiet, demand slow. Yellow stock, 38½ to 40 cts. per pound; dark stock, 36 to 38.

Kansas City.—Comb honey arrivals, 1 car Colorado, approximately 100 cases native by express; extracted, 120 cans Colorado. Demand and movement moderate, market firm. Colorado comb honey, quality and condition good, 24-section cases, few fancy, $4.50; No. 1, $4.35; No. 2, $4.15; extracted honey, white and extra light amber, 14 to 15 cts. per pound; dark and extra dark, 10 to 12; native comb honey, all sales in small lots; quality and condition good; 24-section cases, mostly $4.50. Beeswax approximately 400 pounds arrived; demand limited, market steady, all sales in small lots; mostly 40 cts. per pound.

Arrivals include receipts during preceeding two weeks. Prices represent current quotations.

WOODMAN'S New Protection Hive


SHALLOW COVER
BURLAP CHAFF CUSHION
WINTER RIM
INNER HIVE WALL
DOUBLE WALL BODY
INNER OVERCOATS
AIR SPACE
BOTTOM BOARD
PAT. ALLOWED AUG. 9, '17.

The Hive with an inner overcoat. . Wintered 100 per cent perfect in 1916-17. . . Winter Problem Solved.

The same dimensions as formerly. The construction now is such that a bottomless corrugated paper box can be telescoped down over the brood nest, in between the outer and inner hive walls, as a matter of insulation or protection when preparing them for winter. The work of preparing the bees for winter with this system is a joy. In Spring the boxes are removed and stored away in the k. d. flat. A new circular with large illustrations will describe all. Send today for one.

TIN HONEY-PACKAGES

YOU WILL MAKE A MISTAKE if you do not ask for our LOW PRICES on Friction Top Pails and Cans. We are SAVING MONEY for carload buyers and others of smaller lots, why not you? Our three-year contract is enabling us to make prices a considerable under general market quotations. Let us hear from you, specifying your wants.

FRICTION-TOP TINS

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	..	12	6
Crates holding	...	..	...	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

A. G. Woodman Co., Grand Rapids, Michigan

SHIPPING-CASES
PROMPT SHIPMENT

By the time this issue of Gleanings reaches you you will know your requirements for shipping-cases. We have quite a supply of these on hand now and can ship promptly.

Better order at once as freights are slow, and as they are heavy must go by freight. Express would be too expensive. Next month figure out your wants for next year; then send an order for goods on which we will allow an early-order discount. In ordering shipping-cases please remember they have advanced in price 4c each. . . . .

F. A. Salisbury, Syracuse, New York
1631 West Genesee St.

Are You Throwing Money Away?

No? But are you throwing away old combs, small lots of cappings, or else beeswax scrapings and propolis from the tops of your frames when you clean them? If not, perhaps you are melting up your combs in an old-fashioned way and getting only about half the wax out of them.

Many beekeepers this year secured their season's supply of

Dadant's Foundation

by sending in their combs and cappings to be rendered into beeswax and made up into foundation. Our high-pressure steam outfits get all the wax possible, save these same beekeepers an unpleasant job and return more beeswax in the shape of foundation than they could get by the extra work themselves. If you prefer we will pay you HIGHEST CASH PRICE for all beeswax rendered.

—Send For Our Terms—

Friction-top Cans and Pails

WE CAN STILL FURNISH FRICTION-TOP CANS AND PAILS AT THE FOLLOWING PRICES F. O. B. CHICAGO, KEOKUK, IOWA, OR HAMILTON, ILLINOIS.

2-lb. cans in crates of 612 per crate	$26.75
2½-lb. cans in crates of 450 per crate	22.50
2½-lb. cans in cases of 24 per case	1.40
5-lb. pails in crates of 200 per crate	16.00
5-lb. pails in crates of 100 per crate	8.25
5-lb. pails in cases of 12 per case	1.20
10-lb. pails in crates of 100 per case	12.50
10-lb. pails in cases of 6 per case	.95

SPECIAL PRICES on 5-lb. pails in lots of 400 or more at one time.

Beehives and Supplies

Many beekeepers were delayed in getting their bee supplies last season on account of the congestion of freights. Suppose the same thing should occur next spring? Are you forearmed? Why not get your supplies in early and avoid the congestion?

If you expect to buy a lot of goods, send us the list. We know we can interest you with our early-order offer, and we will guarantee that you will be pleased with the goods you receive. Write today.

WE WANT BEESWAX—ASK US FOR OUR BEST PRICES

Dadant & Sons, Hamilton, Illinois

GLEANINGS IN BEE CULTURE
NOVEMBER, 1917

EDITORIAL

SHORTAGE OF SUGAR FOR FEEDING

AS MENTIONED elsewhere in the Honey Report columns, page 824, the Government has already commandeered sugar. No one can buy more than two pounds for a family. Rich and poor are served alike. While this shortage may be only temporary* many beekeepers who have deferred feeding will be up against it. Some will have to buy honey, and this is always dangerous on account of bee diseases.

The temporary shortage of sugar, and possibly of honey stores, emphasizes the great importance of winter protection. Colonies should not be left outdoors in single-walled hives in northern localities. They should either be put in the cellar or be given good warm housing by either of the methods illustrated and described in this issue.

In a few cases in small towns the beekeepers may be able to buy brown sugar in sufficient quantities to tide them over. It is nearly the equal of the white, and is excellent for dry feeding in trays placed over the cluster of bees.

* * *

POLLEN FOR SPRING BREEDING

THIRTY YEARS ago one of the bee-journals was filled with what was called the "pollen theory." There were some of the early writers, including the late James Heddon, who believed that pure sugar stores free from pollen was a guarantee to good wintering; and there were many who believed that pollen was the sole cause of dysentery in the spring.

But it was discovered that while sugar-fed colonies would pass thru the winter in fairly good condition they were unable to raise any brood; and brood-rearing in the spring, to a moderate extent for outdoor wintering, is almost a necessity to replace the old bees dying off.

In these later days it seems to be the generally accepted opinion that natural stores containing pollen give better results in wintering and springing than the artificial stores. Honey, besides being a more natural food, contains some valuable elements besides pollen; for, apparently, pollen in the combs is a necessary food element—not for wintering but for springing when bees start brood-rearing.

At one time it was believed that the artificial pollen substitutes such as rye meal would supply the deficiency; but the beekeepers of the United States know that there is nothing equal to natural pollen. A colony cannot build up to good working strength unless it can have natural pollen.

* * *

UNITING BY NEWSPAPER METHOD

REFERENCES have been made in late issues to this plan of uniting bees. For the benefit of those who may not have the former numbers of GLEANINGS handy, we may say that the plan contemplates a method of uniting two under-strength colonies one on top of the other, with a single sheet of newspaper between. In a short time the bees will gnaw a hole thru the paper and gradually unite without going back to the old stand. Of course it is understood that one of the queens should be removed, and it is important that the other be caged.

We find it necessary, however, to go a little further and put on a queen-excluder in addition to the newspaper. A queen for the two colonies is put either above or below, wherever the strongest cluster is.

We have also found it necessary to punch a hole thru the paper with a pencil, because we have learned occasionally that bees in the upper hive, on account of a lack of ventilation, worry and die off in bunches.

We also discovered that the two families will not unite until all the brood is hatched out in the queenless compartment. By confining a queen to the upper or lower hive the bees will gradually work toward the part containing a queen, but not until all the brood is hatched out.

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* It is reported that there will be relief as soon as Cuban and beet sugar gets on the market.

In cooler weather it is not necessary to use a newspaper, but unite direct and cage the queen.

In cold weather, there will seldom be any fighting and not much trouble from the bees returning. The newspaper scheme, however, is much preferable, but should be applied in September or August. If the weather is at all warm it is absolutely necessary to punch a hole thru the paper with a pencil or else some bees may smother.

* * *

QUEENS FOR EXPORT

SOME TEN YEARS ago we were able to deliver a much larger percentage of live queens to foreign countries than we have been able to do in the last few years. It was expected, of course, that when the great war was in progress there would be considerable difficulty in getting queens thru alive, and that is precisely what did happen; but even before the war began, queens were not going thru to foreign countries as they had formerly done. Part of this may have been due to the fact that the Postoffice Department requires the boiling of the honey that goes into the queen-cage candy. Boiled honey is not as good as unboiled; however, we have had practically as good results with invert sugar syrup as with raw honey for domestic trade. But our deliveries have not been as good for the export business.

Mr. Isaac Hopkins, of the *New Zealand Bee Journal,* attributes the difficulty to modern methods of grafting in queen-rearing. But this cannot be the source of the trouble, for precisely the same methods in rearing queens were used ten years ago.

Mr. A. Baratt, a correspondent of the journal mentioned above, suggests that the greater mortality is due to the queens being bumped in the mail-sacks more severely on account of the quicker service. He also suggests that the mail-bags are now being fumigated as they were not in earlier days. It is our opinion that Mr. Baratt, aside from the influences of the great war, has suggested the two main causes for the greater mortality of queens for export.

In reference to fumigation the question might arise as to why some queens go thru alive in a package while others are dead. It is possible that some queens can stand more than others; but it is rather significant that when a package of queens goes thru they are either all dead or nearly all alive, with their attendants. This would lead to the supposition that the last mentioned were not fumigated, while the others were.

We are writing to the Postoffice Department to inquire whether all mail matter for export is generally fumigated; and if so, to what countries.

* * *

DE MUTH'S METHOD OF WINTERING

THE READER'S attention is directed to the Demuth method of wintering referred to on page 842. We may add that the plan has been tested out in a limited way, and found to be good; but, as stated in the article, we would not advise any one to go further than to try out a few as compared with other methods of wintering.

The suggestion has been made that, instead of having the entrance of the inner case so it will open up to the ends of the frames, the entrance slot should be placed on the side in order to avoid a draft thru the frames. We believe it is a good idea, altho it would not permit of giving a large amount of packing space all around the packing-case as in the other way.

It cannot be made too emphatic that in reducing from ten to six frames that the combs on which the bees are to be wintered should have sealed honey as well as some pollen. Sealed sugar stores and a comb of pollen may answer.

* * *

SENDING COMB HONEY BY MAIL

OUR READERS will remember we have always advised against doing this, as we do not believe it is practicable. A sample section of comb honey came to us this morning, Oct. 15, which the sender desired us to pass on, as he wished to know the quality and source. Apparently the outside of the package was all right; but on opening it up there was a mess. The section had been very carefully wrapped in paraffine paper, and this paper was all that prevented the honey from leaking into the mail-bag. Around the paraffine paper was a carton; around the carton several folds of stout corrugated paper; and outside of the whole there was wrapping paper folded and tied. In spite of all this protection it is a wonder that the entire contents of the mail-bag which held it were not smeared with honey.

A single section of honey can be put into a small market basket and packed in excelsior. The package ought to be such that it may be thrown clear across the street without damage to the comb; but a section of honey would be broken sometimes. It is not advisable to ship comb honey in the section by mail unless the comb is thoroly attached to all four sides, and the cells next to the wood containing honey are sealed. The average comb should be cut out of the section, wrapped in several folds of paraffine paper, then in several folds of other paper, and the whole inserted in a ball of excelsior, and the excelsior put into a small market basket with a handle.

The reason why we recommend cutting the comb out of the section is to get it away from its slender attachments. A very slight jar will break the comb loose from the section; and when the package is bumped around in the mails there is so much room in the section box that the comb will be battered to pieces. On the other hand, if the comb is cut out and washed to remove the drip and then carefully wrapped as explained, there is no chance for the comb to rattle around in a loose space as there would be if broken from a section box.

When one goes to this trouble he had better send the honey by express. It would cost but a trifle more.

Some day some one may devise a scheme for sending comb honey by mail. At present there is nothing to prevent its going into a mail-sack where it will be smashed as sure as fate. If there is anything that can make a general mess among a lot of paper it is a section of comb honey broken to bits; and if there is anything that would make a postal clerk madder we don't know what it is.

WINTER NESTS FOR OUTSIDE COLONIES

THE DEMUTH method of wintering, referred to on page 842 of this issue, calls for a reduction in the size of the winter nest from a ten-frame colony down to a six-frame or less. It has been the practice among the best beekeepers who winter outdoors to contract the summer capacity of the hive down to not more than eight frames, and very often down to seven. The question whether a good colony can be squeezed down to six frames may be debatable. In our own locality it has been our practice to reduce a ten-frame down to an eight-frame or less. These seven frames filled with stores will give all the room a good colony needs for winter, as a rule. The extra space in the hive can be better taken up by means of dummies or two-inch chaff division-boards. If two of these are used on the outside in an ordinary double-walled hive, the cluster within on the six combs will be much more able to keep warm. The packing on the sides will be increased by two inches, giving the colony a much better chance to winter, and at the same time conserve stores. We are satisfied, in the light of the experiments conducted by the Bureau of Entomology, Washington, D. C., that the ordinary commercial double-walled hive with the average colony should have more packing on the sides than is provided by the hive. This can be done very effectively by putting in division-boards and filling the space back of them with leaves, straw, or other packing. If the combs on which the bees are clustered are well filled with stores almost down to the bottom-bar, the colony ought to winter well on six combs. The average L. frame with old stores will weigh in the neighborhood of 6 lbs. After the winter nest has been formed, there should be left to each six-frame colony 30 lbs. of stores, or 36 if the combs are filled solid.

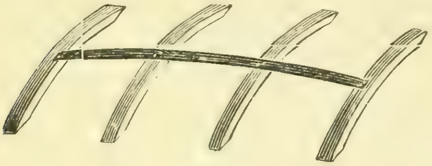
If colonies are to be wintered in the cellar, the cellar well dried and ventilated, the amount and disposition of the stores in the combs is not so important. In a cellar where the conditions are right, 10 lbs. may be enough for a colony for wintering; but in that case the colony would have to be fed as soon as put out in the spring, and spring feeding is not advocated.

An inside-wintered colony ought not to have less than 15 lbs., and 20 would be better. An outside colony, according to some of our authorities, should have from 30 to 40 lbs. We have found from 25 to 30, provided the colony has a large amount of packing, is quite ample. But we always carry over some extra combs containing sealed stores to give the colonies in the spring if they need it.

CLUSTERING-SPACE ABOVE THE COMBS

IN THE OLDEN days it was regarded as quite important to have a clustering-space between the top packing and the tops of the brood-frames. The purpose of this was to allow the bees to move from one comb to another without being compelled to go around the ends of the frames. This extra space was provided by placing two or three blocks of ⅞ square stuff, or corncobs, crosswise of the center of the frames. Over all was placed a burlap sheet.

For a number of years manufacturers sold what was called the Hill device, a little framework something like that shown in the illustration below. This was placed over the tops of the combs, and a burlap sheet over all; but in late years the Hill device has disappeared from the catalogs of the manufacturers.



The question is, "Has the top-clustering-space scheme for outdoor-wintered colonies been abandoned?" Yes and no. In later years it has been the practice to place a thin board (commonly called a super cover) over the tops of the frames. This allows a bee-space over the entire top of the hive, and it has usually been considered sufficient; but the question is, whether it would not be advisable to go back to old principles by allowing an inch or more space between the covering and the top of the frames. In localities where the absorbing principle* is used, the space of an inch over the tops of the combs is almost a necessity. To accomplish this it has been the practice to place a bridgework under the packing so that the bees can pass from over the tops of the combs as fast as they consume the stores and move over to other stores. In other localities, where the climate is more mild, a thin super cover not sealed down seems to provide ample room.

During the last year or so beehive manufacturers have been putting out for inner covers, under the telescope outer cover, boards bound on four sides with ⅜ cleats. A hole in the center for a bee-escape is left open for the passage of the moisture into the packing above. By placing the cleated side of the board down there will be left a space of ¾ inch over the top of the frames for clustering. Those who have the latest-made hives can very easily give this amount of space over the frames, and we certainly would advise it. The old-style super-covers might better be cleated in the same manner; and if a hole is cut in the center large enough to afford a bee-escape the moisture can pass upward.

In our locality we have made no provision for this escape of moisture, and find that bees winter nicely. But some of our best authorities in the colder climates insist on the importance of having the covering on top of the cluster made so that the moisture can pass upward in the packing above. We are inclined to take a middle ground, and therefore believe that the escape-board when reversed gives all the top clustering-space that is needed, and at the same time affords an opportunity for the moisture to go above.

* * *

CONVENTION DATES

ELSEWHERE in the Just News department of this issue it will be noted that John C. Bull, secretary of the National Beekeepers' Association, has arranged to have the dates of the various state conventions consecutive as nearly as possible. Some effort along this line has been made in the past in this direction; but even then, several important dates conflicted.

It is, perhaps, unnecessary to explain that, by having the dates consecutive, it enables speakers like Dr. E. F. Phillips, or others of national reputation, to go to any one or all of the conventions. It is certainly desirable to have Dr. Phillips, apicultural expert of the national Government, get in close personal touch with all of the state associations; and speakers who have been all over the United States can sometimes give out information that is valuable to local societies. Moreover, they help boost the attendance.

Gleanings expects to be represented at most of the conventions—probably in the person of E. R. Root. C. P. Dadant, of the *American Bee Journal,* will attend several. See Just News.

* * *

The picture appearing on our cover this issue is the royal palm, with the algarrobos in the background. The photo was presented to us by U. Trista, of Santa Clara, Cuba, as was also the picture of the papaya carrisa, a tree we have previously mentioned as growing in A. I. Root's southern garden.

This papaya, we are told, is a tree growing on Mr. Trista's bee-farm, and, altho but one year old, it has produced forty-one fruits, some as long as seventeen inches. All three of these trees are very good honey-producers.

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* This consists of a porous covering so that the moisture can pass upward into the packing above.

QUEEN-REARING TROUBLES

Some of the Reasons why the Queen-breeders all Over the Country were Unable to Fill Orders Promptly

By the Editors

THE season just past has been the most difficult for the queen-breeder and the most trying to the queen-buyer of any year within the recollection of the present generation of beekeepers. It has been "something just awful," as both queen-breeder and queen-buyer will testify. The cause is not far to seek—unfavorable weather conditions prevailing over the entire country. This bad weather began early in the year and stayed late.

That the queen-buyers may gain some comprehension of the queen-rearer's troubles and worries during the season of 1917, and that the queen-rearer may gain more charitable consideration from the queen-buyer than he has generally had this year, we are printing below the statements of some prominent queen-rearers regarding their trials and tribulations of the last few months. These queen-breeders don't exactly say so, but they undoubtedly endorse the Biblical statement that "charity suffereth long and is kind."

NO OTHER BUSINESS SO DEPENDENT ON THE WEATHER.

In all of my experience as a queen-breeder I never had such unfavorable weather conditions to encounter as this season. I venture the assertion that if the queen-buyer could place himself in the position of the queen-breeder for one season, and experience the difficulties with which the queen-breeder has to contend, he would sympathize with him. Of all the occupations in the world, none are more dependent upon weather conditions than that of queen-rearing.

Last June I could not supply one-half as many queens as usual, on account of inclement weather. We worked in cold drizzling rains many times to save queen-cells—not for the sake of the almighty dollar, but trying to avoid disappointing our customers; but after doing all in our power, we had to disappoint many. There was so much cool weather in June that queens would not come out to mate promptly. Also the bees balled and killed so many that we made but little progress in queen-rearing, and were obliged to return hundreds of dollars.

The queen-breeder's life is one of constant worry from the beginning of the season to the end. He starts a lot of queen-cells and then he is hoping that he may have favorable weather to form nuclei when the cells are ripe and must be attended to; but, alas! the weather is cool and rainy, and he must work under great difficulties or lose his queen-cells. After his nuclei are formed, and each one is supplied with a nice queen-cell, he is hoping again that the weather may be favorable for the young queens to mate when about five days old; but too often the weather is cool and cloudy, the queens cannot come out to meet the drones in the air, and the bees become discouraged and ball the queens, killing perhaps forty per cent of them. Now he has a lot of orders waiting to be filled, and does not know what to tell his customers, as he cannot know just what the weather will be. So you see he is constantly worried after doing all in his power to surmount the difficulties with which he must always contend.

Morgan, Ky. J. P. MOORE.

THE BREEDER SHOULD NOT BE EXPECTED TO GO BEYOND HIS GUARANTEE.

It is not necessary to say that we had bad weather, and that orders were not filled on time. No doubt some purchasers lost by not getting bees or queens on time, yet we doubt if the losses of the purchasers equaled the losses of the breeders. While most of our customers were reasonable, and appreciated the fact that we were doing the best we could for them, yet some were unreasonable. But there were so many reasonable customers that we felt we did not need to bother to sell to those whom we felt were unreasonable. One man asked us to guarantee to deliver him so many packages of bees on a certain date in 1918, and wanted to know how much damages we would pay him if we failed to deliver on the date specified! One customer was very much annoyed because we were five days late in making his shipment, then he paid the express and receipted for in good condition a shipment of 25 2-lb. packages of bees that were all dead because of unreasonable delay on the part of the carrier. Customers should never pay the express charges on bees that are dead when the shipment is not worth the charges. When there is any loss at all, notation should be made on the express receipt, and this receipt sent to the breeder with claim for adjustment.

We believe that breeders agree to replace only the actual losses, and that customers should state in pounds and actual number of queens what they honestly believe the actual loss is, and not write to the breeder that the loss was about so and so, expecting the breeder to replace more than the amount of the loss.

We used large cages; and, with the exception of a few heavy shipments that were improperly handled, we had few losses.

Usually we think customers will be better off to stick to the breeder with whom the order was first placed, and not demand that the order be canceled if bees are not shipped on the specified day. It rains some days in this part of the world, and then it is impossible to do anything.

We do not hold ourselves liable for more than the purchase price of the queens. No customer who sees a colony go to pieces on account of a bad queen, meanwhile making no report to the breeder, should ever complain to the breeder because of the loss of the colony. In case of the few complaints we have of unsatisfactory queens, most of the complainers usually offer some excuse for not returning the unsatisfactory queens when asked to do so. If complaint is made we think the unsatisfactory queen should be returned, and that postage should be sent the breeder for the mailing of queens to be replaced. All dead queens should be returned to the breeder, for frequently he can tell the cause of the trouble, so that it can be avoided in the future. We want to be fair to all of our customers and give them value received for their money, and we think that almost all if not all of the other breeders feel the same way.

With extracted honey where it is now, it looks as tho we had better be producing it rather than selling queens or bees.

Mayhew, Miss. D. D. Stover.

WHO IS TO BLAME FOR THE ENVIRONMENT AFTER ARRIVAL OF THE QUEENS?

Because of the unusual weather conditions this year, we found that we were not always able to send package and queens by the date agreed upon. This season was also unusual in the number of reports we received of queens failing to lay or laying only drone eggs. We did not receive a great number of such reports; but there were too many, and we feel sure that these reports were true, altho we always let each queen lay twenty-four or more hours before taking her out to send. We breed drones also, so as to have them in great numbers all the season. Of course we always welcome a report that we sent out a queen that proved "no good," but we do not welcome the behavior of such queens. Out of the 5500 queens sent this season, we have had 38 such reports. All of these queens were replaced at once. Tho we go to some expense in order to counteract the effect of bad weather as far as possible, still we were hindered more or less by weather conditions.

I suspect that very bad weather and nectar conditions are often the cause of the bad results obtained by the buyer. Perhaps he gets a small swarm and queen so early in his locality that he has no nectar. He puts these bees on comb foundation (instead of combs and honey), and by feeding syrup hopes that the bees will make comb, the queen lay, and all work properly, about the same as tho there were a natural flow. I think the above case is *too contrary* to natural conditions for us to expect good results, unless good weather comes soon after he hives the said swarm.

We do know that on a certain day a shipper may send to two people in different parts of the country, perhaps twenty-four queens or swarms and queens. No difference is made by the shipper in quality of the bees nor care of preparation. One customer sends a nice complimentary unsolicited report, and the other sends a bad report. We learn that the first customer had good weather and nectar conditions, while the other had the reverse conditions. Was the shipper responsible for this difference? Well, I guess if the shipper is praised for the first shipment he should be "cussed" for the latter. At any rate the good reports are so many more than the bad ones that we always have smiles, courage, and confidence. W. D. Achord.

Fitzpatrick, Ala.

WILL HIGHER PRICES BE NECESSARY?

The past season has been the most discouraging one in my twenty-five years of experience as a commercial queen-breeder. An unusual amount of bad weather in the spring, and dry weather along in the summer, made it extremely difficult to fill large orders on time, and some of the smaller orders could not be filled as promptly as usual. From what we can hear, our experience has been about the same as that of other breeders.

Now, Mr. Editor, how things can be made more amicable or satisfactory to both breeder and customer in a season like this, that problem is too much for us. However, it is our opinion that, if the present prices on honey are maintained, the demand for bees and queens for the season of 1918 will be more than the breeders can handle, even if the season be favorable, and hence we would suggest an advance in the price of stock. We have already had inquiry for about 300 colonies of bees for next season's delivery. What will it be when the season arrives? It is true that higher prices might deter some from placing as large orders as they would otherwise, but it probably would have a tendency to cause the common bees among the farmers to be picked up and Italianized which would be a good thing.

I believe the pound-package business did not meet the expectation of some of the northern customers, especially those who did not succeed in getting their orders filled till late in the season. The reason we speak thus of the pound-package business is that the bulk of our package business was for queenless packages to strengthen those that were bought from the South and had dwindled owing to bad weather. It is our candid opinion that combless bees under two pounds ought not to be expected to build up from bare foundation or even dry combs.

Bellevue, Ohio. H. G. QUIRIN.

HALF THE EQUIPMENT, TWICE THE DEMAND.

This was about the worst season that I have ever seen in this part of the country. In the early spring when the poplar and spring flowers were just beginning to bud we had a severe freeze which practically ruined the spring flow, so necessary for brood-rearing. All during March and April we had an unusual amount of rain which left the roads impassable over most of the country, making it impossible for us to reach our outyards and feed the ones that were short of stores. This caused our loss in some yards to amount to as high as 25 per cent. The colonies that survived were left in such a weak condition that it was impossible to make up more than one-fourth of the nuclei that we could have taken out in a normal season.

Then after getting our queen-rearing started, so little nectar came in that it was necessary to feed the nuclei in order to rush up the queens that they might lay on time (which very few did.) It usually took from twelve to fifteen days and often more to get a queen mated and laying, and this delayed deliveries from two to five days.

Then the clover flow came on with only about half the blossoms that there should have been. The bees being in the condition they were, managed to store only enough for winter with no surplus at all.

With twice the demand for queens, half the nuclei, and double the work, it was absolutely necessary that some one wait. However, I have had very few complaints from dissatisfied customers, for I always explained just how it was; and if they were unwilling to wait I returned the money.

Fort Deposit, Ala. L. L. FOREHAND.

OCTOBER SECOND, AND STILL BEHIND.

For rearing queens this has been the hardest season ever known in this locality; and from reports of southern breeders the conditions were about the same there. Each season we often have a few weeks at a time when rearing is difficult, but never are such conditions continuous as during this season. Foreseeing the outcome, I put forth extra efforts in starting cells, but soon found that, even after the cells were nicely started, I had to use twice the colonies to finish them, as here we have nothing but a slow flow till July. Even when feeding the cell-builders, they seemed to note the outward surroundings, and, altho crowded in two stories, they would tear down some of the cells after they were capped. It is under such conditions that the breeders have had to labor this season.

Then, to make it much harder on us, we find that in no other season have we had such prosperous and liberal sales on bees and queens. In spite of all the extra labor, I sent out more bees and queens than during any previous season during the last twelve years; yet it has been trying to the customers, for since May, I was from a week to ten days behind on all orders. I always tried to respond promptly, stating my situation, and leaving it to the buyers to wait or try elsewhere. Some of these orders were passed around to other breeders who were also unable to fill them. This is October 2; and at this date I have not yet caught up on my orders.

Glenwood, Mich. E. E. MOTT.

LONGING FOR SUNSHINY DAYS.

There is no individual more to be pitied than the queen-breeder, especially since his business depends so largely on weather conditions over which he has no control. We never saw such a peculiar season as the one just past. There were scarcely enough bright sunshiny days to earn the name of summer. The honey-flow came to a close about July 20, and that ended the season. It was very difficult to rear queens while robbers were prowling around from morning till night.

Getting queens mated was also uphill business, for virgins were often lost. Where nuclei were strong and well supplied with stores we were more successful. The small baby nuclei were very unsatisfactory.

Queen-rearing, in order to be a pleasure, requires warm sunshiny days with some nectar coming in all the time. The average customer, not receiving his queens on schedule time, is ready to complain at once, not knowing that the poor queen-breeder is lying awake nights worrying about the weather, and longing for sunshine, so that his young virgins can mate. However, we were able to mail queens quite promptly with the exception of some large orders which were somewhat delayed. This last season was the most peculiar of any in all our experience, covering nearly 35 years.

Delphos, Ohio. FRED LEININGER.

TWO WEEKS OF COLD WEATHER AND ALL IS LOST.

The past season has been bad for queen-rearing, and lots of orders for queens were delayed. In fact, it has been impossible for many queen-breeders to raise queens at all. Under such conditions it seems to me disappointed buyers should not complain.

Consider the case of the breeder who sells queens by the hundred and has his cells all ready to come out, when about two weeks of bad weather occurs and all is lost. Of course he has promised to fill orders at a definite time, and therefore the buyers become dissatisfied and say a good deal concerning the matter. Now I think the queen-buyer ought to have some knowledge of how long it takes to rear queens. It requires about twenty-five days from the graft, and sometimes thirty days. Another season I believe the beekeepers will have more patience in waiting their turn if they only realize how hard it is to rear queens under bad weather conditions; and remember that there is no breeder who does not want to send queens by return mail.

Barnetts, Va. J. B. BROCKWELL.

SOUTHERN BREEDER ESPECIALLY HARD HIT.

The southern queen-breeder has been hard hit this year. Our bees went into winter last fall in tiptop shape, with abundance of good stores, so we were hoping for a good season. Well, time for spring came, and still it was cold and rainy, and continued so. In fact, it was so cold that we had no clover bloom at all. During the summer, about all the honey-flow we had was from basswood, which did fairly well. In August we were feeding every colony that had had its surplus removed in July. It is hardly necessary to say that, under such conditions, queen-rearing is very difficult. However, we have managed to keep ahead and fill all orders promptly. We have not cut any prices, nor offered any cheap queens, but still we have had a splendid queen trade—almost double that of last year, and have had no complaints so far.

Dowelltown, Tenn. J. IVAN BANKS.

CELLS GALORE DESTROYED.

The past season has been a bad one, for which the cold spring offers the only explanation. We would graft a lot of cells hoping for good results, only to find at the time of transferring the queens that the bees had destroyed most of the cells. This was very discouraging when our customers were continually writing that they must have their queens by return mail. We hope next season's queen-raising will be a more pleasant and profitable business, and that our customers will be more willing to wait when occasion demands.

Barnetts, Va. WM. S. BARNETT.

STEADY RAIN FOR TWO WEEKS.

This past season in North Carolina was the most backward one that we have had in many years. The spring was late, and, on account of excessive rain and cold, the bees were very slow in building up, thus making early queen-cells quite impossible. After settled weather did come, we had a very serious rain lasting for two weeks, a steady downpour, with scarcely a let-up. During this time it was almost impossible for virgins to mate.

Liberty, N. C. H. B. MURRAY.

FLORIDA VS. INDIANA

Keeping Bees in the North in the Summer Time and in Florida During the Rest of the Year

By J. H. Collins

FOR the past six years I have kept bees in Indiana in summer and in Florida in winter, and have noted a number of factors in beekeeping which differ greatly in these different latitudes.

TEMPERATURE.

Altho there is a period of hibernation or rest in both states, yet in the South it is less remarkable and of shorter duration. While bees in the North are tucked away for winter, in the South there are but few days when they cannot fly out in play and even gather a little pollen and honey, for here there is scattering bloom of peach-trees and a few other flowers all winter. In the North we usually have warm days followed by warm nights. But in our southern home, where the climate is largely influenced by the ocean, we usually have warm days and cool nights. Therefore the bees are not only careful to guard and warm their brood but are often reluctant, in early spring, to enter the supers. For this reason I am inclined to favor an eight-frame hive for the South, while a ten-frame possibly is better in the North. In either case the bees can be induced to work in supers more readily by placing some of the brood above.

Bees are less trouble in the South because the work of providing winter protection is eliminated. On account of the length of the season, no doubt a person remaining all summer in Florida could have a greater increase of bees than in the North.

J. H. Collins keeps bees both in Indiana and in Florida.

FORAGE.

In the North we depend mostly for our surplus upon white clover, with here and there a sprinkling of basswood, and in some localities this is supplemented by fall flowers or perhaps sweet clover. But the beekeeper in Florida looks to the orange for his first and main crop, and later to the palmetto (I speak particularly of my own locality). Altho the jessamine, maple, and citrous blossoms, etc., furnish fine honey, I regard the orange-blossom honey as most important of all, on account of its beautiful color and finest flavor.

After harvesting the orange honey it is time to hasten to my bees in the North. In order to secure the crop from the palmetto, etc., during my absence, I leave my southern hives with plenty of super room and some bait combs above the queen-excluding honey-boards.

About the 10th of May I am among my bees in Indiana in time to control their swarming and provide supers for their surplus. Returning to Florida in November I usually find the supers filled with golden honey. Of course I reckon on losing a few swarms; but the profit so far overbalances the loss that I am satisfied.

BEE ENEMIES.

The enemies of bees are, to my mind, a great deal more troublesome in the South than in the North. Perhaps this is not true in regard to diseases such as foul brood, etc., but the external enemies are fiercer and more numerous.

Birds here destroy more bees than in the North. I have noticed that my hives of blacks outstrip the Italians in early increase and honey-gathering, and I am of the opinion that our Italians, colored as they are, prove a shining mark and are destroyed in greater numbers than blacks.

Dragon-flies are formidable enemies that I have never had to encounter in the North. They are swift of flight, can easily take a bee on the wing, and are especially destructive to queens on their wedding-flight. To destroy the dragon-flies, I advocate putting up boxes for the martin birds (not the bee martin or kingbird, but the house martin, *Horundo purpurae*). The male is a beautiful glossy black, and has soft pleasing notes. These birds spend most of the day on rapid wing scouring the atmosphere in quest of food, and I have been informed by a close observer that their nests often contain fragments of dragon-flies.

Ants here are more numerous and warlike than in the North. But I easily circumvent them by putting my colonies on benches supported by rods passing thru cups filled with tar.

Roaches are hard citizens to deal with; but cold mornings they are so benumbed that they can be destroyed easily.

Tho we have not grown rich in the pursuit of apiculture, still it has always given us good returns in money, health, and happiness.

Cassadaga, Fla.

FLORIDA THE PLACE TO LIVE

Questions Answered Regarding the Climate and the Possibilities for Beekeeping and Gardening

By Jacob Alpaugh

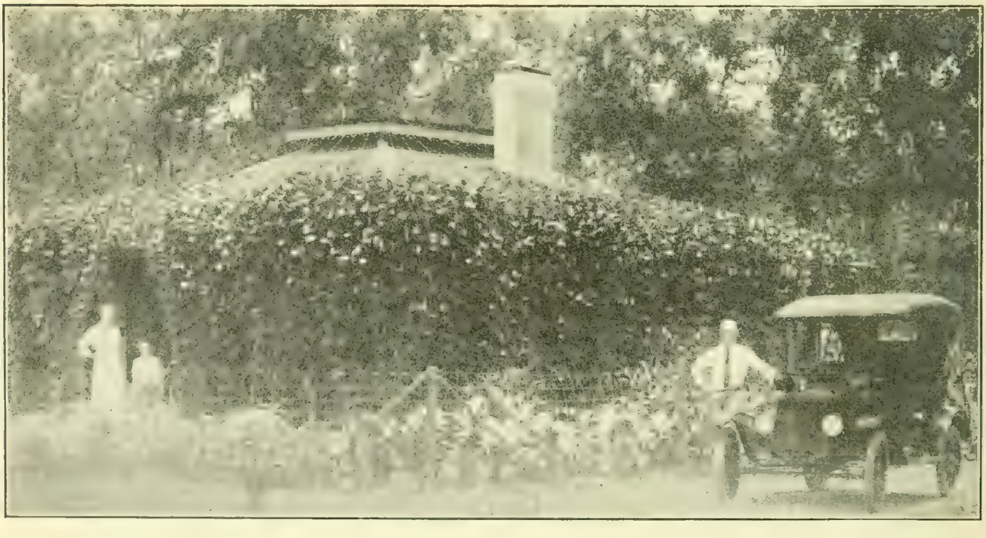
We have been greatly pleased by the many visits of friends and relatives since we pitched our tent in Florida. However, it has become almost impossible to answer all the private letters concerning this country, its climate, possibilities for beekeeping, etc., so I have decided to send these few lines to Gleanings, where a good many of our Canadian beekeeping friends will see them.

We spent two very enjoyable winters here, and nearly every one told us that the summers were just as pleasant as the winters, if not more so. This we have since verified, for we find that the rainy season, which commences anywhere from the first till the middle of June, moderates the climate thruout the entire summer. We have had ideal weather since June 12. On July 11 the mercury was standing at 75, for we had a nice shower in the morning, which kept it cool the rest of the day.

The rainy season here differs from that of most countries where it drizzles for days and weeks at a time. Most of our rain comes in short spurts of showers lasting from ten minutes to half an hour, and perhaps the rest of the day will be nice and fine. It may rain nearly every day in June and July, possibly in August or even later. Even during the rest of the year we are liable to have rain any time. Strange as it may seem, in this southern extreme the highest the mercury reached, in the summer of 1916, at Lakeland was 94.

As regards the bee business in Florida, I am not very well posted. Here at Lakeland the local beekeepers tell me that some seasons the bees do well, and other seasons quite poorly. We have twelve colonies. Last July we had a fine orange-honey flow, the trees being full of bloom, caused by last winter's freeze and dry weather following up to June 12, since which date the rain caused the trees to bloom more than usual for June. The orange here is supposed to bloom in March; but nearly every year there is more or less of a June bloom. It is needless to say I am keeping bees here only for pleasure, and this is the place to keep them *for that purpose,* as one can handle them every day in the year if he wishes.

I also take great pleasure in having a nice garden, and shall have to admit that I have had four times the satisfaction raising garden truck here that I ever had in the North. It is only a couple of years since we built here, therefore I did not have any garden until last September, 1916. I planted our first corn last February and we had all the green corn we could use in May and June, and after that we had corn in all stages, planting every two or three weeks. It looks as if we should have green



Jacob Alpaugh's new home in Lakeland, Florida, where he plays with his bees and his auto.

corn the rest of our days if we continue to live here.

Our bungalow we built as a winter home, not thinking that we could live here in the summer; but it will soon be two years since we came, and so far we are both enjoying good health—one of the greatest charms a nice climate and good country can offer. There is no mistake about the sun getting hot here, but in the shade it is always pleasant. The illustration shows our bungalow partly shaded with vines which resist the rays of the sun and make the veranda pleasant, even in the middle of the day.

We never owned an auto until we came here; and we now have one for the same purpose that I am keeping bees, and this is surely the place to sport with an auto, as one can use it every day in the year with comfort, since the roads are dry in only a few hours after the heaviest rains. Scarcely does a day pass that we do not go down town with the auto.

We are one mile from the main street, but still inside of the corporation. Lakeland has a population of about 8000; has three nice lakes inside the corporation, four others partly in or adjoining, also good boating and fishing in all of them. This is supposed to be the best inland town in Florida on account of its elevation, which is 265 feet above the sea, which is only 30 miles west of us at Tampa. The water is also supposed to be as good as any in Florida, if not the best; and on account of our elevation we are above malaria level, and fevers are almost unknown. The cost of living here is about the same as in the North, unless one happens to be a vegetarian with a good garden; then he may be almost independent of the rest of the country outside of his own lot. While we are not vegetarians, yet our garden supplies most of our living.

If any one wants more information from me concerning Florida, let him ask thru GLEANINGS so that I can answer all at once.

Lakeland, Fla.

MANAGEMENT OF 300 YARDS

Extensive Beekeeping as Practiced by the Sandwich Island Honey Company on the Island of Oahu

By Leslie Burr

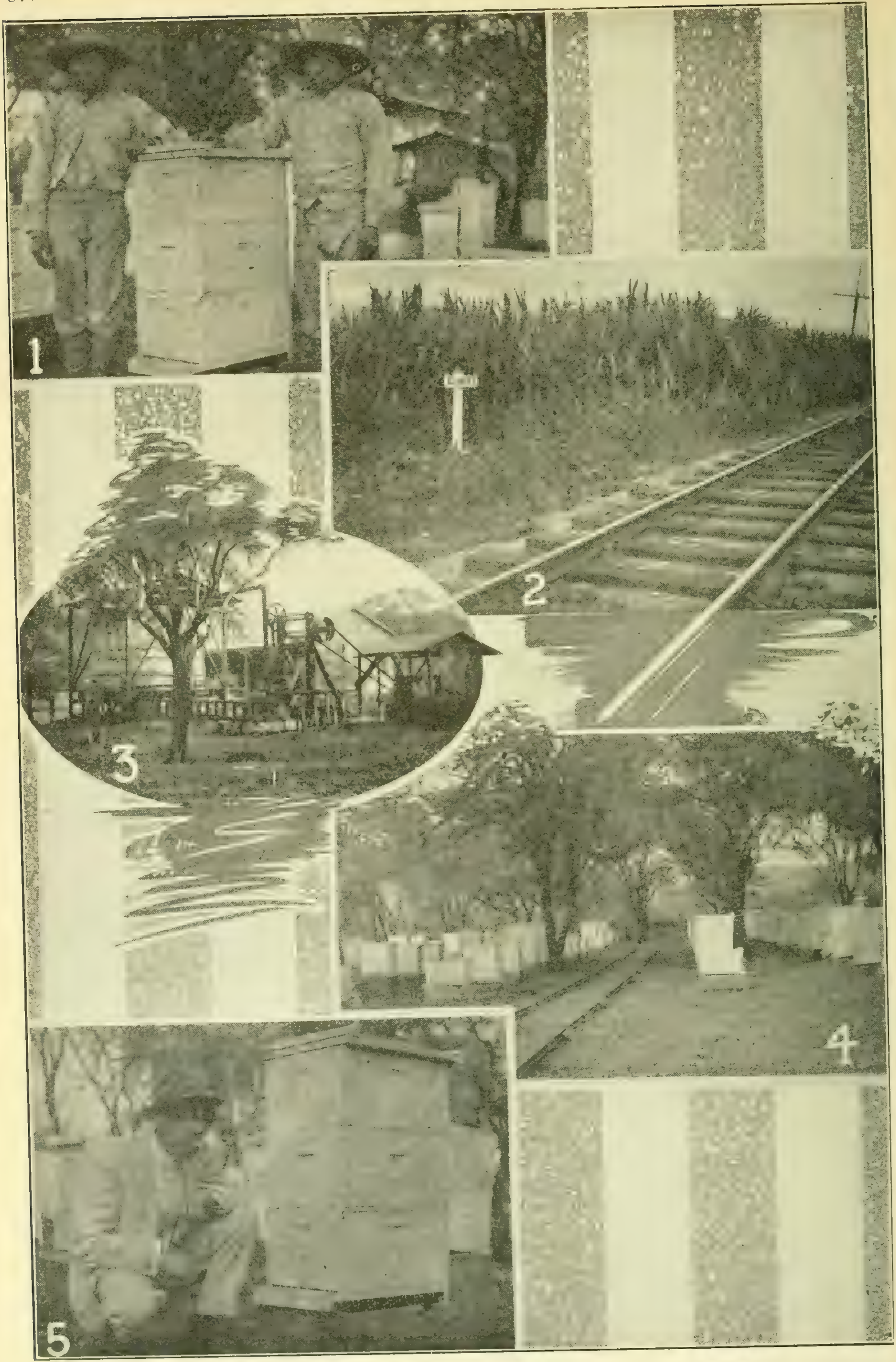
THE island of Oahu is third in size of the Hawaiian Islands. The island of Hawaii is the largest, Maui next, and Oahu third. The city of Honolulu is just inside the tropics. The temperature of the islands is very even, the temperature seldom going below sixty degrees Fahrenheit, or above ninety. The area of the island is 598 square miles. If it were perfectly square the island would be less than twenty-five miles across.

A large portion of the island is mountainous, there being two mountain ranges—the Waianae Range, peaks of which reach an altitude of over 4000 feet; and the Koolau Range, the highest point of which exceeds 3000 feet. The mountains are of volcanic origin, being for the most part but great heaps of blue lava. There are also volcanic craters or cones that are separate from the mountain ranges. These are tufa cones, being composed of tufa and volcanic cinders. The largest and most important of these cones are: Diamond Head, Koko Head, Punchbowl, and Twin Craters, or Salt Lake Crater. The vegetation on the mountains is scrubby and there is practically no nectar-secreting flora, so the mountains are of no value for bees. By reason of this the territory available to the beekeeper is considerably reduced.

The Gilbert Brothers, when they entered the ranks of the honey-producers, were animated by the island spirit to do things on a big scale; and in this they are succeeding. They first made themselves absolute masters of the situation by obtaining control of all the island with the exception of Honolulu. They never have to worry about rival beekeepers on their range, for the good and sufficient reason that a rival beekeeper could not obtain a location on which to place an apiary.

For moving bees Gilbert has a team of mules. The particular mules he uses are called the "honey mules" for the reason that they have become accustomed to stings. All they ever do when stung is to rub out the stings from off their noses and from around their eyes. This they do by rubbing their heads against their legs.

The bees are all Italians, and they very seldom swarm. Gilbert has a number of reasons for his bees not swarming. The first reason is that he has always made it a practice to rear all of his queens from colonies that did not swarm. Another reason



Some scenes in O. S. Gilbert's Hawaiian apiaries. 1. Two trusty Japanese beekeepers; 2. Station on the Oahu railroad; 3 Gilbert's pumping-plant that furnishes water for the apiary and for irrigation; 4. one of the central apiaries; 5. Leslie Burr.

is the way the bees are worked just before they begin to breed up for the honey-flow. The principal flow is from the algaroba, and occurs during the summer months. All winter long the bees do nothing in the way of gathering surplus. What little they do gather is put into the brood-nest, with the result that, just prior to the algaroba flow, the brood-nests have about half the combs filled with honey. When the time comes for the bees to breed up for the algaroba, those frames of honey are taken out of the brood-nest, and frames with full sheets of foundation put in their place. By the time the bees get these sheets of foundation built out and filled with brood the algaroba flow is on, and the bees immediately lose all idea of swarming.

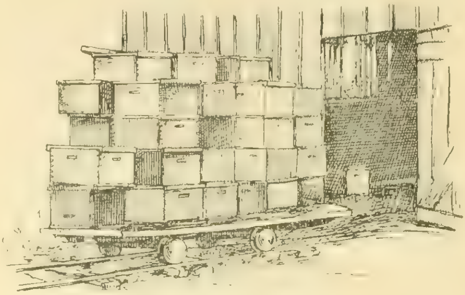
The bees are also given plenty of super room. When the first super is about half full of honey the second one is added. The frames are spaced eight frames to a ten-frame super. Gilbert has another theory that helps account for his bees not swarming. This theory, however, he admits "is but a theory;" but he *thinks* there is something in it. He believes that the bees are not inclined to swarm, because there is no place for them to go when they leave the hive. There are no hollow trees or other natural cavities that the bees can enter and use as a habitation. When once a swarm is cast, that swarm has to do one of two things—either hang on the limb of an algaroba-tree or return to the hive from whence it came.

MANAGEMENT OF APIARIES.

With three hundred apiaries it is necessary that a well-developed system of management exist. This, Gilbert has. The apiaries are divided into four groups. Each group has a central apiary, and all work is directed and managed from these central apiaries. They are the distributing points for supplies. The making of foundation, and all other work of a like nature, is also done at these central yards. The Japanese, who are employed thruout the entire year, live at these central apiaries. Men are kept at most of the other apiaries during the honey-flow.

These central apiaries, where situated on the railroad, are of enough importance so that the railroad management considers them stations. One is called Gilbert, as is shown in (2) in the photograph. The vegetation in the picture is sugar-cane. On the opposite side of the railroad is one of Gilbert's algaroba forests; and it is in this forest that the apiary is situated. To give an idea of the completeness of this central apiary at Gilbert, I took a picture of the pumping-plant, photograph (3). This plant furnishes water for general purposes, and for irrigation.

In some of the apiaries, as is shown in the accompanying photograph (4), a track is laid from the honey-house to the apiary. On this track a car is run on which twenty-five or thirty supers can be placed, and the combs are taken to and from the extracting-house on this car.



All the hives have queen-excluders; and when extracting, the supers are taken off entire, bees and all. The method of driving the bees from the supers is very simple. First an empty super is placed on the ground, and in it is placed some smoldering burlap. On this super and over this smoldering burlap are placed the supers, bees and all, as they are taken from the hives.

They are usually stacked five high, and it takes but a few moments for the smoke from the smoldering burlap to drive all the bees from out the supers. The supers are then placed on the car and taken to the extracting-room. All the honey is taken off at an apiary before commencing to extract.

As a rule, at least two supers are used to the colony. When the first super is about half full, another super is added on top. When this first super is ready to be extracted it is removed and the other placed over the brood-nest. By reason of the foregoing method the actual time consumed in taking off the honey of seventy-five or a hundred colonies is very short. However, it necessitates having on hand at least two supers for every colony of bees.

EQUIPMENT.

All hives and paraphernalia connected with all the apiaries are of standard goods. The hives are ten-frame Langstroth; the frames are Hoffman; and the extractors are Cowan, everything being manufactured in the United States, and purchased thru agents.

Honolulu, Hawaiian Islands.

CHEAP WINTER PACKING

A Scheme for Winter Protection Requiring No Equipment Beyond that Found in Any Apiary

By E. R. Root

THERE are thousands of colonies thruout the United States left on their summer stands in northern latitudes with no other protection between them and the weather than a single thickness of 7/8 boards made into a hive. Such protection is altogether inadequate; and the only wonder is that all colonies in single-walled hives do not actually freeze to death. The records show that many of them do and many others survive the winter in a weakened condition.

One reason for this lack of protection is labor and expense. A quadruple winter case such as is recommended by the Government involves considerable expense for the lumber.

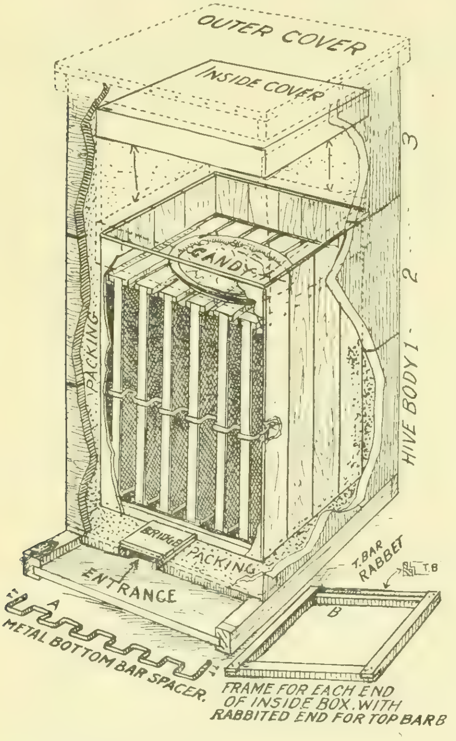


FIG. 1.—The Demuth method of winter packing. It consists of three hive-bodies, cover, and bottom for outer case and a six-frame box of thin lumber for inner case. This is stood on end when packing material is poured around and on top.

When we were visiting the Government apicultural building, at Drummond, Md., Mr. Geo. S. Demuth, one of the employees under Dr. E. F. Phillips, suggested a plan for wintering bees in single-walled hives that required little more than the equipment already in a bee yard. The amount of protection afforded by it perhaps would not be as ample as that provided by the quadruple winter case, but enough, probably, to provide sufficient protection for most northern localities—at least those south of the Great Lakes. The plan involves a scheme for using ordinary single-walled hives and supers, with a very little additional outlay for an inner case to hold the winter nest of the bees. Practically every extracted-honey producer must have one or two full-depth supers in addition to the regular hives for the brood-nest. These supers are not used during winter except to hold combs; and even if so used, the combs might better be stored in cheap racks put up in an ordinary honey-house. The equipment for wintering as we shall here outline it consists of an ordinary ten-frame Langstroth hive and two ten-frame full-depth supers. Practically every ten-frame colony can be squeezed on six combs. Now, then, if these six combs with bees are put into a cheap box made of 3/8-in. lumber without ends, we have a complete outfit for wintering. When the first cool day comes, the bees with the six selected combs are put into the box just mentioned. The whole thing is then set on end in three hive-bodies tiered up on the regular stand. It will thus be seen that the frames holding the cluster stand on end. There should be a slot cut in the bottom end of the inner case holding the six combs, and a bridge should connect this slot with the regular hive-entrance proper; see Fig. 1. Packing material of any sort is now poured between the inner and outer case. If the bees are short of stores, a pie-plate of hard candy can be inverted over the top end of the inner case. If the combs are well filled with sealed stores, a telescope cover can be set over the inner case, or even a piece of burlap or old carpeting. Last of all, packing material may be poured over the whole until the top of the three stories of the regular hive is full, when the regular hive-cover is put in place. This leaves between four and five inches of packing. It should be noted that this arrangement provides a tall winter brood-chamber of small lateral dimensions which is theoretically, at least, the best possible shape to conserve the heat of the cluster.

In selecting combs it is advisable to choose six of the best, including those that contain some pollen, to provide for early brood-rearing. Then it may be advisable to feed a little sugar syrup to fill the combs solid full of sugar stores after the bees are packed. In lieu of sugar syrup, unsalable dark extracted honey might be used, with the assurance that it contains no bee disease. If the colony is too large to be squeezed into a six-comb space, a cap might be provided, leaving four or five inches of clustering space above the ends of the frames now at the top.

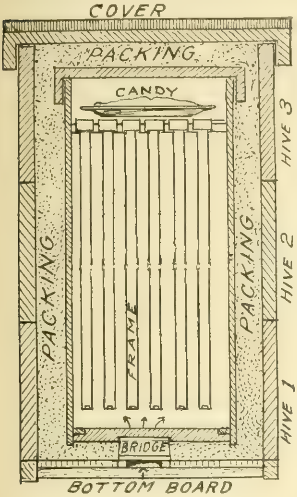


Fig. 2.—Sectional diagram showing the Demuth method of packing.

In the cut submitted herewith, illustrating the idea, we have had one end of the case lengthened out beyond the ends of the frames so as to provide this four-inch extra space for clustering room. This space may or may not be used; but if the colony is exceedingly populous, room could be given in this way. It might be a wise precaution to put above the frames a slab of hard candy.

It will be seen at once that the only expense involved will be a cheap six-frame box without ends made of ⅜ lumber to hold the cluster. The outer case consists of three regular hive bodies, cover, and bottom, which the apiarist already has. To hold the frames there should be a framework with a rabbet on one side as shown in Figs. 1 and 3. The cheapest kind of ⅜-inch lumber can then be nailed around and the case is complete. No ends are required beyond a suitable cover of a board or cloth for the top to prevent the packing material from mixing with the bees inside.

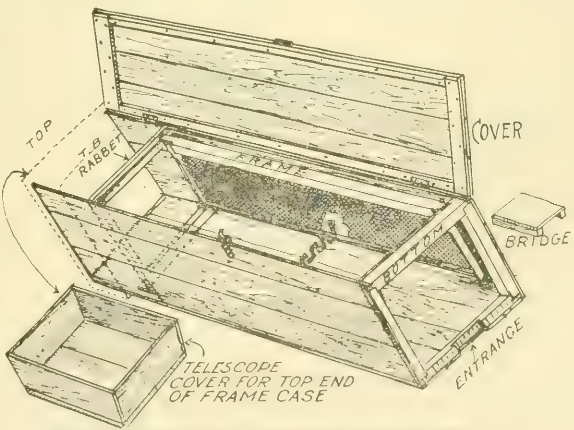


Fig. 3.—The Demuth inner winter packing-case.

The drawing is out of proportion for the Langstroth frame, but it illustrates the principle. It is made of thin cheap lumber nailed around the square frames. These latter are rabbeted at the top to receive the ends of the six brood frames. The lid is folded down, when the whole is set down on end in three hive-bodies as shown in figure.

So far the directions for packing in this way involve the use of extracting supers. When one has only comb honey supers he can pack in this way, but it would be necessary to use twice as many supers, assuming that they are half the depth of the regular. They would work just as well as the deeper supers.

We do not go so far as to say that this is equal to the quadruple-case plan; but it probably would be equal to the much more expensive double-walled chaff hive. It certainly would be better than a single-walled hive; and if the plan were intelligently carried out it would be the means of saving tens of thousands of colonies thruout the northern states. The expense is so slight that there would be no excuse for the beekeeper not to use it. Of course, it will not be as handy as the double-walled hives; but it will save dollars and dollars of extra outlay.

It will not be too late in most localities to pack bees immediately after the receipt of this issue. "Better late than never" applies to packing bees.

While this idea of packing bees in this way may not be strictly new, the credit of suggesting it at this time belongs to Mr. Geo. S. Demuth. This inner winter case was developed and given a practical test in his apiaries in Indiana, so it is no untried theory, but has stood the test. A. I. Root, away back in the 70's, actually tried out a similar scheme of wintering, with one colony. The early files of Gleanings show that it worked successfully. If the bees are packed early enough they would readjust their stores.

We would not advise the average beekeeper to try it out too extensively. We expect to pack ten colonies in each of our outyards to see how they compare with other colonies packed in Government or quadruple winter cases.

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

"Shall we shade our hives in the apiary? If so, why, how, and when? Is it really necessary? Some beekeepers do not shade their hives; others do. Why do they so do? Do the ones that shade secure more honey?"

These are questions to which it is not easy to give definite answers; but it is desirable to know as much as possible about this matter of shade. The temperature of a colony of bees in the center of the brood-nest, when the bees are rearing brood, varies from 92 to 98 degrees, depending upon the size of the colony and the temperature of the outside air. Until the temperature in the sun reaches this point, shade is of no benefit—on the contrary, it is an injury, as it deprives the bees and brood of the warmth from the sun. When the temperature in the sun goes above 98 degrees, and begins to climb up to 105, 115, 125, to 140 degrees, then the bees are obliged to lower instead of raise the temperature in the hive. To do this they "cluster out," while hundreds if not thousands stand at the entrance of the hive, and with their wings create strong ventilating currents of air by drawing the hot air from the hive, while another set of bees on the inside cause the ventilated current of those outside to circulate all around the combs. At times of extreme heat ninety per cent of the bees leave the combs of brood and honey so that these ventilating currents have a better chance to go between all of the combs more freely.

At a beekeepers' picnic one hot summer day we were told that bees would "hang out"—that is, cluster upon the outside of the hives, instead of working, if their hives were left unshaded during a hot day, and that they were compelled thus to desert their hives to save their combs from destruction. This I think was rather "far fetched," for in times of a good flow of nectar, with plenty of unoccupied room in the supers, I have never known bees to stop on account of heat. With me, bees either cluster out when very hot from lack of room for storing in the supers, or from a scarcity in the fields. After the basswood flow is over, during the first half of August, the hives will be black with bees sometimes for a week or more during hot weather; but as soon as nectar begins to come in from buckwheat this clustering out is to be seen only during the afternoon after the yield of nectar is over. Weak colonies seldom make any demonstrations of discomfort from heat, even when left unshaded, while strong colonies are puffing and blowing like a dog after a rabbit-chase. Why is this? Does it not look as if the strong colony were suffering from the accumulation of its own heat, that cannot escape fast enough? A colony is a living heat-producing body, and can be kept cool somewhat as we keep our bodies cool by wearing thin clothing, having a free circulation of air all about us, and by being protected from the sun's rays.

The color of the hive has a great bearing upon the necessity for shade. Black or any dark color absorbs heat, while white reflects or repels it. In red, brown, or black hives that stood in the sun, I have had combs melt down in spite of all the ventilation the colony could give, while I have never known them to melt in white hives.

The only time when shade is needed is from eight to four o'clock of our hottest days; and some temporary, easily removed shade is preferable to shade-trees. In fact, a permanent shade like that furnished by evergreens is an injury in the spring, robbing the bees of the benefit to be derived from the heat of the sun. After trying almost everything, I have settled on a light shade made of ⅜-inch lumber, 2½ by 3 feet. This lumber is cleated at each side with a piece one inch square. On one end is nailed a 1 x 3-inch piece (on edge) as long as the hive is wide. When in use, this 1 x 3-inch piece rests on the north edge of the hive cover, the opposite end of the shade-board projecting beyond the south edge of the hive. The three-inch piece at the north is to raise one end of the shade-board three inches from the top of the hive, thus allowing a free circulation of air between board and cover. This shades the hive when shade is needed, in the middle of the day, or from about eight to four. In a windy location it is necessary to lay a brick or stone upon this board to keep it in place. Thus the bees will keep their places in the sections during the middle of the hottest days. With a board laid flat, or no shade-board at all, the most of these storing and comb-building bees will leave the sections during the middle of hot days.

For the comfort of the apiarist, it is well to have a few scattering trees in the apiary; but the branches should be trimmed high enough so they will not be in the way.

Borodino, N. Y. G. M. Doolittle.

FROM THE FIELD OF EXPERIENCE

Letters from a Beekeeper's Wife

By the Hearth, Nov. 1, 1917.

Dear Sis:

Returns are in! You will be glad to know that our wholesale honey sold for a good price and as a result we have $2250 in bank! It really seems too good to be true that we have all that money in a lump. We have never had such a good year since we spread out from our home apiary. I believe that each one of us has spent that money a thousand times in imagination.

Of course, I want it spent on the children and the house. Harriette will be ready for college next fall if she can take a little extra work this winter, so I want her to have lessons in French and German. Then Florence needs a new piano—ours is absolutely worn out, and the child has so much ability that I hate to hear her trying to get music out of it, altho I believe she could get music from a tin pan. And when I look at the house and see the painting and papering that needs to be done, I just ache to spend some money that way. Then if we *could* take a few of the good magazines that we long to be reading each month! Oh dear! I am dreaming again, when Rob has said that every cent we can spare must be paid on the principal of the mortgage. I suppose everyone has a specter in the background—ours is a vampire called Principal, that consumes everything we have.

I suppose winter is the bees' specter. It is always in the background, even on the sunniest day of summer. They must work and hoard every minute, and what is it all for? Winter, the inevitable, comes along with its icy fingers, and the summer stores in the cells gradually grow smaller. The poor little creatures don't realize that their specter is there while they work, and it is a blessing they don't. Now as I have planned how I would like to have the honey money spent, I have known all the time that it would have to go toward reducing that principal. However, it doesn't spoil the pleasures of dreaming—nothing can do that!

Rob has been packing the bees for the winter and I wish you could see them! We are putting four hives close together in a big box and filling in all around them with a thick layer of dry leaves. Surely with such a blanket they can't help but be warm. Isn't it wonderful how they know how to keep up the warmth of the hive themselves? Last winter we had some in the observation hive just outside our bedroom window and they were as good as a thermometer. When the weather was cold the cluster drew together, but just as soon as it grew warmer, the cluster would spread out again. During cold weather, there was always a circle of buzzing bees in the center, working hard to keep up the warmth. Those in the circle of buzzers would give up their places to others, who would begin moving and buzzing immediately, so that the circle remained unbroken. Billy said he was going to watch until he saw two bees quarrel over whose turn it was to make heat, but that never happened. The harmony and obedience to law in a bee colony is marvelous, isn't it? We all felt sorry when that brave little colony finally succumbed to the cold.

This year Rob has given each of his colonies more honey than it can possibly consume during the winter, but he says he is going to make sure that none die of cold or starvation. This packing will soon be over, and then he will have time at last to read the file of old bee journals that he bought last May at a farm sale. He has been waiting patiently for the leisure to get at them, for he says that some of those old journals are better than much of the more recent literature. I wonder if he is right.

I hope your boys are over their colds. Give them each a hug for me. With love to you,

Ever your loving sister,

Mary.

Sowing Sweet Clover with Wheat or Oats

A reader of Gleanings at Rock Island, Ill., wishes to know about seeding sweet clover with fall wheat, and with oats and barley the following spring. These are both good ways to seed, and under right management will surely prove successful.

This correspondent being located near Rock Island, Ill., his land no doubt will need a liberal application of ground limestone, which he can get very cheap from the Linwood quarries at Davenport, Iowa. Three tons per acre harrowed into the surface soil when the wheat is sown will put his land in fine condition. The seed can be sown either in March, and the weather allowed to cover it over, or it can be harrowed in the first dry spell after the wheat has started in the spring. I think I should prefer the former plan.

It is better to get the ground all plowed this fall, both for the oats and barley, sowing the finely ground limestone this fall and covering it lightly with a harrow. Then in April, one-third less of some early kind of oats may be sowed and one-third less of barley. Little difference will be seen in the yield of grain, and the quality will be better. Also the thinner stand of grain will give the sweet clover a better chance to make a stronger growth which will count much in preparing the land for the next planting of corn.

If the season is a wet one, there will be a lot of clover to turn under, and it should in no case be plowed before October, after the clover has made all the growth it will, both of top and roots. If the season proves to be a very dry one, and the clover does not make a large growth, then it will be best not to plow the land until the following spring, during the last half of May, when there will be clover standing not less than twelve inches tall. In either case, where a large growth is turned under it is best to double-disk the field, mixing the heavy green clover thru the soil. This will prevent the ground from drying out as it might if a thick layer should underlie the soil above it, thus preventing the moisture from coming up from beneath in a dry period after planting the corn.

In any season, sweet clover should not be sown later than the last of July, unless so late in the fall that it will not sprout before spring. It does splendidly sown in July when plenty of moisture is present to get it nicely started.

Obtaining a heavy growth of sweet clover according to the above description is a very efficient plan for preparing land to grow a heavy crop of good solid well-matured corn, as land thus prepared pushes the corn so fast that it ripens fully ten days earlier than usual. Twenty pounds of hulled seed is the right amount for one to sow, as the stand will be thick enough to repay well for the extra seed required.

Delmar, Iowa. FRANK COVERDALE.

* * *

Moving Bees by Motor Truck

Having moved an entire apiary by motor truck, I have decided that my experience may be of interest to others. O. S. Mullin, of Holton, Kansas, sold me the apiary, which consisted of 80 hives of bees. These were in ten-frame hives, 13 double-walled and the rest single-walled. I wished to move them from Holton to Chapman, Kansas, a distance of about 140 miles by road. If I shipped them by rail, they would need to be transferred twice and would be on the road for two days or more. I studied it over and decided to move the bees by motor truck and to send the metal tops and other supplies by freight. The truck that I hired (altho rated at only one and one-half tons) had been hauling two tons every day, and I figured that the bees would not make much over a two-ton load.

It took nearly two days to get the bees ready to move. Out of seven-eighths lumber Mr. Mullin and I made frames covered with wire screen. They were the size of the top of the hive, and 1½ inches deep. We removed the inner covers, and with eight-penny nails fastened these frames to the tops of the hives, thus giving the bees a clustering space about two inches deep. We closed each entrance with a folded piece of screen which we pushed in and fastened with a tack.

The bees were loaded on the truck from six to eight o'clock in the evening of August 1, and the start was made from Holton about nine o'clock. We did not weigh the load; but by the time we had traveled six or eight miles we knew that the truck was overloaded. Soon we came to a hill that was too steep for us, and it began to look as tho we would be unable to proceed. However, each time the motor died we blocked the wheel with stones, then sped up the engine, let in the clutch, and again advanced from one to three feet. By repeating this process we climbed several hills. About four o'clock, after covering twenty-five miles of our trip, we finally came to a soft place where there was a spring in the roadside. The hind wheel sank in, hub-deep, and we were stuck.

As soon as it began to get light I went for gasoline and water. We unloaded about half of the bees and pulled out of the hole. Deciding that our load was too large, we left twenty-two hives by the roadside, after opening the entrances so that the bees could fly. It was about half-past seven when we started on; and at nine o'clock we reached St. Mary's, where we secured a hose and gave the bees a thoro wetting, such as we had also given them on leaving Holton. I expected to stop and unload them if it became so hot that they showed signs of distress. But altho they seemed restless whenever we stopped, they would always quiet down on starting. And so by wetting them

FROM THE FIELD OF EXPERIENCE

at noon and again at three o'clock we managed to get along until we reached Chapman at nine in the evening.

When I examined them I found two had the combs melted down and a lot of the bees killed. In a few hives there were some combs broken but nothing serious. However, the weather had been in our favor, for there had been some rain and the day was cloudy with a good breeze blowing from the south. If it had been a hot day I am sure that I would have had to unload.

I now had to go back after the hives we had left. We started with two Fords about 4 P. M., and reached the bees at eleven that night. We loaded and were ready to start back in an hour and a half. At seven the next morning we reached Chapman. The bees moved by the Fords did not come thru in as good condition as those that came by truck, for the Fords traveled so much faster that the side swing broke the combs worse. Still I did not lose any of this lot entirely, and therefore was pretty well pleased.

The truck hire and expense of running cost me $50; the Fords, $12 each; and the freight on the supplies was $11. That made the entire cost of moving about $85, which was a little higher than the freight would have been. Nevertheless I am of the opinion that it is the cheapest way to move bees any distance under a hundred miles, provided one does not carry more than 50 hives for every 3500 pounds of the truck capacity.

Chapman, Kan. HARRY A. HUFF.

Notes with and without Interest

On page 612, August, Dr. Miller asks about the flavor of sweet-clover honey. I think the very decided, spicy flavor is due to the presence of cumarin, and this would probably be very much in evidence, whether the honey was produced in South Dakota or Tennessee, provided it was pure, or nearly pure, sweet-clover. As to its being "of delicious flavor," that, of course, is entirely a matter of personal taste. However, most people who are accustomed to the mild-flavored white-clover or alfalfa honey, object to the strong flavor of pure sweet-clover honey, and are rather inclined to be suspicious of it. White honeys are usually milder than dark or amber, but sweet-clover and orange-blossom honeys are notable exceptions. Water-white orange honey from California is "delicious" for the first few meals, but I would not care for it as a steady diet.

Mrs. Allen says, p. 623, "well-built hives, strong colonies, vigorous young queens, plenty of stores, and contracted entrances, are about all we need." I think she has omitted one of the most important factors in successful wintering in this climate, and that is the use of two-story hives for winter brood-chambers. For several years I have been conducting some experiments in various methods of wintering, and the results show conclusively the value of the two-story hive. While I am not convinced that it would pay us to go to the expense and trouble of providing packing and winter cases for the bees, I am sure that the added story gives needed protection from cold winds, and provides room for more stores where the bees can easily reach them. Then a colony so wintered doesn't need to be disturbed until settled warm weather.

Weather conditions were unfavorable during the season in Tennessee, and the honey crop has been almost a failure, not more than a third of a normal crop having been gathered. The quality, too, is below the average. The bees, in some localities, will need to be fed for winter stores. In this connection, the Nursery Rhyme on page 628 might be revised to read,

And when he saw the clover bloom,
With all his might and main
He put the empty supers on,
Then—took them off again.

* * *

J. E. Crane wants to know more about lespedeza, page 614. This clover is proving a godsend to the farmers of the Cotton States, as it will grow well where no other clover will, with the possible exception of sweet clover. I am not sure whether it is hardy north of the Ohio Valley. In the western part of our state it grows spontaneously, just as does white clover in the central part. It furnishes fine pasture, and a large amount of good hay. Unlike the other clovers, however, it is of little value as a honey-plant, as it yields very little.

* * *

In a recent inspection trip thru the western part of the state, I found the disease situation much improved over what it was a year or two ago. Dr. Ward also reports generally improved conditions in eastern Tennessee, altho several new foci of foul brood have been located. Many beekeepers are adopting modern methods, and becoming more proficient in the handling of their apiaries.

Franklin, Tenn. J. M. BUCHANAN.

FROM THE FIELD OF EXPERIENCE

Motoring thru California

For a quarter of a century I did my traveling by rail, except one trip down the Sacramento River by boat and another up the San Joaquin by like conveyance. At another time I journeyed up the rugged northern coast counties in a two-wheeled rig drawn by a pinto bronco. This was mostly in company with the late J. H. Martin, known by his writings in GLEANINGS as the "Rambler." Three years ago, having more leisure than formerly, I decided to see California in bigger chunks than I had hitherto; therefore I bought an automobile; and, feeling as independent as any railroad president, I began my travels.

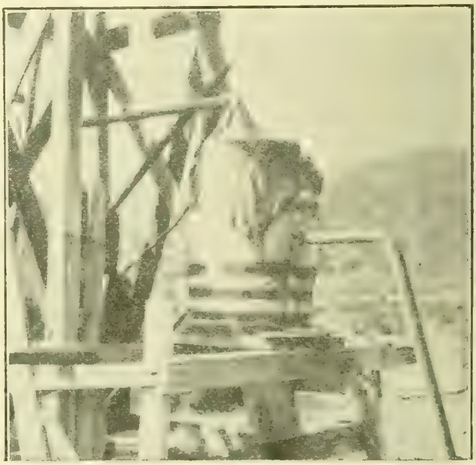
E. T. Flanagan, formerly of Texas, but now of San Gabriel, Cal.

On our first run south we also visited E. T. Flanagan, from whom I had previously purchased gladiolus bulbs while he was living in Illinois. He is a Virginian by birth, I believe, but lived many years in Texas, where he had large apiaries. For years he was an apiarist and dealer in bee-supplies at Belleville, Ill., but now is practically out of the bee-game, keeping bees only for the honey they supply his table.

An apiary on the Mexican border in California to which the bees undoubtedly smuggled honey across the line.

While motoring to San Diego I came across an apiary on the roadside just after emerging from Boquet Canyon, in Los Angeles County, where there was a small windmill pumping a $1\frac{1}{2}$-in. stream into a barrel. At the discharge end of the pipe a grain-sack had been tied, and draped in such a way that it carried the flowing water to the edges of the aforesaid barrel, some entering it, and more, I suppose, running down the exterior and the wood-work below. All over this water-drenched surface there was a mass of bees. They were literally falling over each other in their mad scramble to suck up a fill of the water. The day was a hot July one, and, I presume, there was no other water nearer than a mile or so, for we had not seen much in the lower part of the canyon we had left. No attempt was made to regulate the supply. It went trickling and dripping to the ground, except some which was piped to the house several hundred yards away.

Oakland, Cal. W. A. PRYAL.



Nothing better than a piece of wet burlap to provide water for bees.

FROM THE FIELD OF EXPERIENCE

Advantages of the Shallow Extracting-frame

On page 359, May, Mr. J. E. Crane remarks, "I agree with R. F. Holtermann that a shallow extracting-frame is a first-class nuisance, p. 251, April." Now, admitting that the shallow frames have some drawbacks, I cannot let such wholesale condemnation of them pass without making a protest and saying a few words in their favor.

They really have many good points—the principal one, in my opinion, being that they are a great help to brood-rearing in early spring. In a climate such as we have in the coast region of British Columbia, spring often comes quite early, but the weather is very changeable. Brood-rearing often starts long before fruit-bloom; and sometimes as early as the beginning of April, or sooner, I have found it necessary to give the queens more laying-room than the single brood-chamber. It would not be safe at this time to put a full-depth second story on the hives; for, since much of the warmth would rise to the second story, a sudden drop in temperature would cause the bees to cluster too closely, thus allowing a lot of the outside brood to become chilled. A great many beekeepers would never notice this, as they do not care to disturb the brood-chamber by examining it at this time, and they would simply conclude that the queen was reluctant to go into the upper chamber; whereas the fact is, as soon as the weather was favorable for expansion she would be busy laying again in those cells where the chilled brood and eggs had been cleaned out. So, instead of increasing the amount of brood, the colony with a deep super would suffer a decided set-back.

If instead of a full-depth we had put on a half-depth super, the difference in temperature would not be so great inside the brood-chamber. The warmth being kept lower down would enable the cluster to expand more, covering the brood, and the queen would more readily go above to lay. If the queen is capable of occupying still more room after the half-story above is filled with brood, another half-depth super can be put on above the first.

In this locality we aim to have very strong colonies early in the spring, as we have several sources of possible surplus before the clover begins to bloom. In 1914 I sent a fully capped and ripened *shallow frame* of honey that was taken from full supers of surplus maple honey on April 15 to the permanent exhibition of British Columbia products at Vancouver. Of course, this was an exceptionally early season following a mild open winter; but it goes to show that we cannot neglect any method of coaxing our queens to early and continuous laying, thus producing strong colonies ready to store surplus from our abundant maples, golden willows, etc.

Then, again, the shallow frame is useful as a means of separating honeys from different sources and of doing so with less waste in the grading. Often we find our deep supers contain a nice crop of clover that only partly fills the combs when the bees commence to bring in a darker-colored honey. The combs may be nicely capped half the way down the frame; but lower down the cells will be only partly filled with a thin unripe nectar. To extract from these combs at this time means extra work with the danger of having considerable unripe honey; but if we allow such combs to stay on the hives until properly filled and ripened, we get a mixture that is below par, with a consequent loss in grading. The obvious advantage then of using the half-depth or shallow frames is that we can take off the capped clover or other first-class honey separately, leaving the lower half to be completed with the poorer grade.

Another reason why I like the shallow frame is that it is so much handier to give these for winter stores than to feed syrup or liquid honey. The job can be done quickly and easily, and is especially adaptable for those who winter on the summer stands.

A great deal has been written lately in favor of wintering bees in two stories. Apparently the main advantage in this plan is that the space between the upper and lower sets of frames enables the cluster to move bodily from one side of the hive to the other. To get the fullest benefit from this plan, the combs above would have to be full of honey right down to the bottom-bars and the colony a fairly strong one. In the first place, I consider that a full super of honey is far more than is necessary for wintering. And in a long winter of continued cold weather, if the colony was not better than just fairly good, there would be the danger that it might contract itself to three or four frames and move steadily up to the oilcloth under the cover, where the bees would be in danger of starving with cold slabs of honey at each side of them, just as they often do in a single-story hive.

FROM THE FIELD OF EXPERIENCE

In order to reach other frames of honey when their available stores ran out, they would be compelled to leave the top of the hive, which is naturally the warmest part, and to travel the depth of the full frames. This they could not do without breaking the cluster. This is only a remote possibility that may occur during a long hard winter; but how much safer it would be to give for winter stores a shallow extracting-super full of honey! The warmth from the cluster over the late fall brood does not rise too far above them; and it is a very poor colony indeed that can not obtain access to the whole of the frames from side to side during the coldest weather. They have the advantage of the space between upper and lower frames at all times, and there is more than sufficient honey in a ten-frame shallow super for any average colony to winter on.

Moreover, it is easier to give outer protection to a 1½-story than to a two-story hive. There may be a little extra work at extracting time with the shallow frames, but even this is offset by many of their minor advantages, such as less wiring, stiffer combs in extracting time, and better adaptability for producing chunk honey, etc. So with all due respect to such successful beekeepers as J. E. Crane and R. F. Holtermann, I think I will not discard my shallow extracting-frames—at least not in the locality where I practice beekeeping.

St. Johns, Que. A. W. Finley.

[Knowing that Chalon Fowls and his daughters were strong champions of the shallow frame we referred Mr. Finley's letter to them. Miss Fowls replies:]

The above article meets with my most hearty approval. Just now, when some of our strongest and most vigorous young men are going to war, leaving the apiaries in charge of women and old men, it seems a good time to point out the advantages of shallow frames.

In hauling and in extracting, the shallow combs are less liable to breakage; and altho others may differ with us, we have always considered it easier to uncap two shallow combs than one deep one. We keep only enough deep supers to forestall swarming and to insure plenty of winter stores. And we get a much nicer grade of honey by keeping the brood out of the supers and not interchanging much after the season begins.

One day of lifting when the crop is on the hives makes us staunch advocates of the shallow frame and causes us to forget any slight disadvantage caused by handling two sizes of combs during the rest of the season. Of course, if one feels that nothing can quite compensate for the thrill of pride in exercising a strength so herculean that 60 or 70 lb. supers may be tossed about all day as mere toys—I say if one feels like this, let him just insert his tool under two supers instead of one.—Iona Fowls.

* * *

Another Advocate of the Shallow Frame

In another issue of Gleanings, in reporting a beekeepers' convention which I think was in Ohio, R. F. Holtermann is credited with making the statement that he would quit beekeeping if he were obliged to use the shallow extracting-supers, and you agreed that was the general opinion among the majority of beekeepers.

I believe Mr. Holtermann was sincere in the statement that he made, and no doubt it would entail too great an expense to make the change. But why should the wheels of progress be stopped by old and extensive beekeepers who have had *no* experience in the subject of which they talk? It is the same argument that old box-hive beekeepers had against the movable-frame hive.

For a number of years I have been testing these shallow supers, and I have come to the conclusion that, by proper management, the labor in beekeeping can be reduced from 25 to 40 per cent, especially in running outyard work. I have wondered many times why beekeepers in running outyards resort to extracting-outfits on auto-trucks and wagons, unless it is from the fact that large supers are too cumbersome to handle, and hauling them is too dangerous to the frames of honey. Then, again, from all the articles I have ever seen in Gleanings I have yet to see anything on how the honey was taken home when extracted at an outyard. I find, and know from years of experience, that my labor of transporting extracting-supers to outyards and back again with the honey in them is not much greater than the time of taking the tinware out and drawing the honey home in tin cans, the only difference being the extra weight of combs and supers. Altho I will not stop to explain them now, I find, in the use of the shallow extracting-super, a whole system of advantages thruout the entire season.

Chatham, Ont, W. A. Chrysler.

Beekeeping as a Side Line

Grace Allen

RECENTLY a certain Tennessee sideliner bought some more bees—twenty colonies. He had planned to take his negro man with him to get them, but said negro man was temporarily laid up with an accident to his foot. So Mrs. Sideliner was appealed to. Now this particular Mrs. Sideliner is an energetic little lady, so she promptly decided to take the trip for the experience and the fun. Two mules were hitched to a wagon, and they started on their trip—a distance of about fifteen miles. The first part of the way the roads were good; but thruout the latter portion of the journey they had many ups and downs. There, for much of the way, the road followed the bed of a creek. You know how such a creek road goes—the pebbly and too often rocky creek bed is followed all too faithfully, except when it goes winding off in too long a curve; then the road gets independent and goes its own more direct way until the wayward creek winds back again, when again they emerge. Bumpity-bump, bumpity-bump, over the rough way they went, and it was late and dark when they finally reached the home where the beekeeper lived who had been drafted and wanted to sell his bees.

Thru some misunderstanding, this man had thought they were coming in the morning, and so had had the wire cloth over the entrances all day. Two of the strongest colonies, crowding their entrances, had generated enough heat to melt down the combs, and had perished. Loading up the remaining eighteen, they started back at about the hour they had expected to get home.

It was so dark, and the road so difficult, that Mrs. Sideliner with a lantern in each hand walked ahead to find the way. Slowly but surely they covered about a mile, when suddenly lurch, smash—off came a wheel! And slipping, sliding, tumbling—off came the hives! likewise Mr. Sideliner. Fortunately he was unhurt. Fortunately, too, the excitable mules behaved like gentlemen and officers, and there was no panic. But, you see, there they were—right there. Yet they couldn't very well stay there. Neither could they possibly go on home. So they conducted a retreat, purely strategic, of course. Unhitching the mules they left the hives and broken wagon and started back to the place where they had bought the bees.

A wagon-trail that follows a creek bed is bad to ride, but worse to walk; but they circled around thru the dark and the dewy weeds, and at last filed, infantry and horse, as it were into the yard of the astonished man whom they had left a couple of hours before. Here the mules and the lady put up for the night. But Mr. Sideliner went back with his lantern to guard his new bees; for, in the tip-up, combs had smashed, two or three colonies were destroyed, and honey was running out on the ground. Almost as soon as he got back to the dismal scene, some hogs found it, and off and on all night he had to drive off those un-Hooverian hogs. A little fire in the lee of the wagon helped make the chilly night comfortable.

As the dawn finally broke, a near-by farmhouse gradually showed out of the darkness, and soon a man appeared, busy about his chores. Suddenly he seemed to discover the patient beekeeper there by the side of the road, keeping watch over his bees and his smashed-up wagon. He turned to the house. "Put on some more coffee!" he shouted up to his wife and strode out to greet the stranger. Over all the other's protests, he insisted on his coming in for breakfast.

Cheered and warmed by the hot strong coffee and the food and the friendliness, the beeman at last got his wagon repaired and his party reassembled; and in due time they reached home with fifteen hives of bees to add to their apiary, and an interesting experience to store away in their memories.

But how about that method of making increase?

AN ENTHUSIASTIC SIDELINER.

One of the most enthusiastic of sideliners is Mr. G. B. Mays, of Champaign, Illinois, to whom we have referred once before in this department. Being a conductor on a railroad, Mr. Mays must realize the value of the many branch lines that go running off from the main line, hauling in freight and passengers and profits that the main line could never gather of itself. In quite the same fashion, out into the great territory of life's limitless opportunity go all our little side lines, and they bring us in a wealth of experience and pleasure, and

Sideline apiary of G. B. Mays, Champaign, Ill., a "mainline" railroad man who knows the value of a side line

possibly profit, entirely separate from that being hauled in by our main line of work.

Switching back now to Mr. Mays, you can see in the picture his long side line of bees, and also glimpses of his garden and fruits. He enjoys that garden, too, and thoroly appreciates all the good things that it yields. He keeps his bees chiefly for pleasure, tho of course he turns many a pretty section into cash. By keeping only the gentlest of bees, he has no trouble with his neighbors; and anyway they are generally each presented with a nice section of honey when the crop is taken off.

Doubtless his success is due largely to his enthusiastic interest and study and care. Yet he claims he has an excellent location, and he does mention a good succession of flora—dandelion and fruit bloom, white clover and sweet clover, with smartweed and aster in the autumn lasting till killed by frost.

AS TO LOCALITY.

This matter of locality and the flora thereof is necessarily one of prime importance. Take our own bees here in West Nashville; they have practically no fruit-bloom, and almost nothing after white clover fails —a little honeydew in late July, a very little smartweed in August, some bitterweed. Fall feeding, if not unavoidable, is at least the rule. This year we extracted more conservatively than ever before, yet we shall have to feed some of the precious sugar we are all trying to save, as there is considerably less honey in the hives at present writing, early in October, than when we extracted in the middle of July.

A few days ago a pleasant errand took me two or three miles from home, still within the city limits, tho where they go rambling off in another direction into the country. Leaving the trolley at a point where I had never been before, I looked around a bit while walking leisurely up the street. A honeybee went sailing by, and right there where I passed her a vacant lot was riotous with heartsease and white aster! And it certainly looked as tho all the open spaces around there were far more friendly to the bee needs of autumn than our own stretches of ragweed and sweet anise.

"Sow sweet clover," quoth Mr. Bartholomew, when he noticed our roadsides and vacant places recently. Well, may be we will if we have any money left after buying sugar and winter cases.

And speaking of flora, here is a suggestion for this winter—study botany a bit as well as beekeeping — beginners, and any other sideliners who have not already done so, not because we need to be deeply versed in botany to keep bees, but because it is such a natural and lovely companion study to beekeeping, and practical, too, withal. By becoming somewhat familiar with some chosen text-book during the winter we shall be so much more alert and eager when the spring miracle opens Nature's own book again. Then the printed page should take strictly second place, as all the beautiful blossoming lives tell their own stories one after another. A walk along a country roadside takes on added charm when you can greet the growing things by name, and know their ways and their manner and their kin, as does a tramp thru the woods when you know the trees. The pleasure begins with the first interest, there is such great delight in the learning of things. Furthermore it is of real value, of such practical use to the beekeeper. Did you read what Mr. Doolittle said, page 764, October, about a beeman he once visited? Planning on basswood he was, and how his bees would work it, when basswood bloom had already come and gone! And the bees had not had enough room for the honey.

SIFTINGS

J. E. Crane

A FEW days ago I learned that my neighbor had been selling his extracted honey at last year's prices. He had not learned that the price of honey had gone up! He could not afford to take a journal devoted to the interests of beekeepers.

* * *

G. M. Doolittle is certainly sound in his advice on page 764, October, as to beekeeping as a profession or means of support. The greatest difficulty seems to be the uncertainty of the seasons. We can master the wintering problem, the springing of our bees, swarming, dysentery, and even foul brood; but we can not control the seasons or the flow of nectar. Perhaps this is best, that we may not forget our dependence on the good Lord for all our blessings.

* * *

I have always regarded beekeeping as favorable to good morals, but have never carried the matter as far as those old writers that " A Beekeeper's Wife " has brought to our attention on page 765. Rarely do we find a beekeeper who is profane, altho I have known such. The handling of bees has a tendency to make one thoughtful, patient, and helpful.

* * *

Many years ago I had a number of cases of American foul brood, and I found all that was necessary was to shake the bees into an empty hive and let them build new combs while the honey was strained out and the combs melted up for wax. After the honey has been thinned with water, and boiled, it is perfectly safe to feed bees during the spring. I have tried it.

* * *

Mr. P. C. Chadwick gives some good reasons for the instinct of bees to rob, page 682. He says, " The queenless colony has no hope from nature after all possibility of requeening is passed; the colony is on the decline; and without the aid of man it must die. So why should not instinct lead other bees to save that which their neighbor is too weak to care for?" Beautiful economy, surely. And his illustration of Nature's economical ways he might have carried further by stating that when the bees have removed the honey to a safe place the wax-moth lays her eggs that soon hatch and reduce the combs to webs and powder so as easily to mingle with the earth and nourish new plants with their blossoms and fruit. The inspector sometimes sees the whole process going on in the same yard as the result of disease. Not long ago I visited a yard where I had urged speedy attention to save what remained. I found nothing had been done by the proprietor; but nature's methods went straight on, and I found some hives that had been robbed, and no less than six where the larvæ of the wax-moth had reduced the combs to powder, while the ignorant owner was in blissful ignorance that anything unusual was occurring. Disease often destroys a yard of bees, and the millers get all the credit.

* * *

The October number of Gleanings is of special value to young or inexperienced beekeepers, owing to the full discussion of the wintering problem. We had almost forgotten that it was of so much importance. We put our colonies in shape for winter, year after year, with as little concern as to how they will come thru the long cold months as we have as to how we ourselves shall winter. The high price of lumber will doubtless have a tendency to prejudice many in favor of indoor wintering.

* * *

E. R. Root, page 788, gives two good methods of cleaning up combs of honey after extracting. Another and more expeditious way is to place an empty brood-chamber over a strong colony after first removing the honey-board, then tiering up as many supers as convenient on top. The advantage of this method is that the combs are cleaned up very quickly.

* * *

Ruth C. Gifford, page 770, October, seems a little mixed in nomenclature of mice. Wood mice is the proper name for these pretty mischief-makers, rather than field mice, in these parts. We have another mouse that lives in the fields, known as the meadow mouse, that very rarely or never enters a hive, as they are vegetarians.

* * *

I spent much of my time during August in cleaning sections of propolis. It was somewhat monotonous work, but after all interesting, as it gave us a fine time to study the individual characteristics of different colonies, and select some choice colonies or queens for breeders next year.

STRAY STRAWS

Dr. C. C. Miller

THE wealth of information in October GLEANINGS about wintering conditions helps to bring out the point that many things must be considered, and that no one rule can apply to all localities. Speaking of Mr. Doolittle's locality, Mr. Byer says, p. 756, "he lives considerably south of us, and should at least have a climate no colder than ours." But it isn't altogether a matter of latitude, nor, indeed, of coldness. As emphasized by Editor Root, the matter of surrounding shelter is of great importance. Bees may winter perfectly in a protected apiary, and poorly in one unprotected in the same neighborhood, altho one is just as cold as the other. I'm still further south than Doolittle, and likely the thermometer registers higher here than at Markham; but the probability is that if Byer lived here he'd winter in cellar, and if I lived at Markham I'm pretty sure I'd winter out. Altho colder at Markham than here, I don't suppose Markham has the *long-continued* chilling winds we have here, and those winds are the things that drive my bees into the cellar. [After having been in both localities we are inclined to believe that your locality is colder than Byer's. You are about 45 miles from the lake, and Mr. Byer is only 10. You are right. You cannot lay too much emphasis on the importance of windbreaks. GLEANINGS expects to keep urging it until beekeepers everywhere recognize that a screen to protect bees is necessary if not essential in winter in the South as well as in the North.—ED.]

MR. EDITOR, you say, p. 591, that when swarming threatened "we put on an upper story with an excluder between. All sealed or hatching brood was placed above, and all unsealed brood with the queen was placed below." Please tell us why that was better than putting sealed brood below and unsealed above. Also why it was better to put up only part of the brood instead of the regular Demaree plan of putting up all the brood, with the possible exception of one. [The reason is partly given in the reference. The object of putting the hatching brood above is to relieve the brood-nest of too much brood and at the same time supply room in the supers when the brood hatches out, which it will do within a week. In this way the super capacity will continue to be ahead of the bees as they begin storing above. If, for example, there are six frames of sealed or hatching brood put above, there will be in about a week six frames of empty cells available for honey without any action on the part of the beekeeper. The purpose of putting unsealed brood below is to keep the bees more contented. If we put the unsealed brood above it would be two or three weeks before the cells would be vacated for the honey, which, in our locality, might be too late. We do not claim that this procedure is better than the Demaree plan, but as it is used by some good extracted-honey producers we decided to give it a trial, with the result that we are much pleased with it. There was practically no swarming where it was tried. To answer your question directly, putting all the brood above is too much of a good thing, as it is quite liable to result in the building of cells upstairs. If we could put all the hatching brood above with no unsealed there would not be any material for building cells. Understand, we are not advocating this as the best practice for all localities, but as one of several good plans for the production of extracted honey.—ED.]

C. G. G. is advised, p. 789, to take out combs that contain American foul brood and substitute combs of honey from other hives, and then treat by the shake plan next spring. If after there is no longer unsealed brood in the hive, he takes away all combs, replacing with healthy combs of honey, there will be no need of further treatment, for that's just the treatment given by the late W. E. McEvoy in his latest years, and it has much to commend it. There is no interference whatever with bees or brood, only the loss of the diseased combs. The plan deserves more publicity. I've tried it. [You probably left an interval of 24 hours between giving the combs of honey. If you took away the diseased combs and gave combs of honey at the same operation we see no reason why the bees might not store some of the diseased honey in their sacs in the combs given. Anyhow, is it not safer to advise the beginner to be on the safe side?—ED.]

RAISING the hive-cover hinders rather than helps ventilation, some think, says P. C. Chadwick, p. 700. I think Doolittle holds that view. P. C. says, "I am rather of the opinion that this may be correct when the temperature reaches 120 degrees in the shade." If there were no bees in the case, it seems certain that an opening above and below would induce ventilation automatically whenever outside temperature was either higher or lower than the temperature in the hive. And that would make it easier for the bees to ventilate *if* they would take advantage of it. But their instinct seems to make them circulate the air in such a way as both to draw in and expel the air at the entrance. That makes the case a little uncertain. It's important to know, and some day may be Dr. Phillips will tell us. I'm very confident, however, that in my locality it's a big help in hot weather to have big openings both above and below. [If the bees have a certain method of procedure in ventilating by means of which a current of air is forced into one side of the entrance and sucked out at the other side, when you raise the cover do you not make it impossible for them to force the air in on one side and to pull it out on the other? In other words, don't you interfere with their regular scheme? A common pump will not work if there is a leak anywhere in the pump or lining.—Ed.]

P. L. W., p. 788, wants to feed at an outyard without carrying anything but the dry sugar. Years ago I did so. I put dry sugar into a Miller feeder on the hive, and then poured in water, hot or cold. That's all. The same thing might be done with a friction-top pail having holes punched in the cover. [This may do all right in an emergency; but we believe it would be advisable to mix the sugar and water thoroly, and then apply heat, either at the outyard or at home. The trouble we found with the plan above is that the sugar does not entirely dissolve in the water. The mixture is only a thin syrup. In the fall, especially in the late fall, the syrup should be thick. For early fall feeding, the dry sugar and cold water will do very well; and the thinner the syrup the better for the bees providing it is not *too* thin.—Ed.]

I first read about the disappearing disease in Australian bee-journals some years ago, and I understood it was called "disappearing" because of the mysterious disappearance of the bees. Now it is said to be so called because of the sudden disappearance of the disease. Which is right? or are both right? [Both are right; and therefore "disappearing disease" is a good name.—Ed.]

"The bottom-bar of the Hoffman frame is too weak for an extracting-frame. It should either be made thicker or as wide as the end-bars are at the bottom." Thus P. C. Chadwick, p. 700. My frames have bottom-bars 1 1-16 wide, same as top and end-bars, and they work well for extracting. [The Hoffman frame is used by many honey-producers who run for extracted honey, and who find no fault with the bottom-bar as it is. But that is not proving that a wider or stiffer bottom-bar would not, after all, be better. If there are others who side with P. C. Chadwick, let them speak up.—Ed.]

Mrs. Allen, p. 696, seriously questions the statement of the bulletin, that indiscriminate swarming is the general practice in Tennessee. I accepted her view till a little later she spoke about men trying movable frames, as if box hives were the common thing, and then I didn't feel so sure, for box hives and unlimited swarming are likely to go together.

Harvey A. Armbrust has sent me a worker-bee that is short on eyes. Instead of a compound eye on each side, it has only one, and that is centrally located. He says "I have only about a half dozen of these one-eyed bees, and they come out at the playspells. When they try to fly they seem always to come down on the grass, and crawl and buzz away and are lost."

A. I. Root, your estimate of Dr. Barker, p. 798, is all right; but if you ever hear Billy Sunday you'll revise your opinion as to the comparison of the two men. I've heard both, and in comparison would say that Dr. Barker is a zephyr and Billy Sunday a cyclone.

On page 744 I read that an Idaho association has sold its honey at 13½ cents a section, and is offered 13½ a pound for extracted. If the price should continue the same on each, good-by to comb honey. All the better, in these war times.

J. E. Crane, you say, p. 771, you don't worry if your bees have sugar and pollen, as pollen has the necessary elements for brood. Does pollen have all the necessary minerals contained in honey? I confess I don't know.

R. F. Holtermann gives the reasons, p. 674, for glassing sections, and now I'm wondering whether R. F. will hereafter be a glasser. Anyway, it's delightful to hear again from so good a man as P. H. Elwood.

Getting bee-glue off the fingers with gasoline, alcohol, or lava soap is all right, p. 630, and the plan I've generally used is often more convenient. Rub well with a little butter, and wash with soap and water.

My bees, as I expected, have stored enough for winter, and a little surplus in extracting-combs. But I can't afford to extract it—worth more to give back to bees next spring.

OUR FOOD PAGE

Stancy Puerden

LET me tell you a story. Five years ago a very busy man, manager of a chain of theaters thruout the eastern part of the country, broke down in health. No food seemed to agree with him, and he was so reduced in flesh that he weighed only ninety-six pounds. When he left his office to go home at night his private secretary scarcely expected to see him alive again, as he was so extremely frail. The doctors not being able to help him find a diet that agreed with him, he began to experiment for himself. I don't know just how much experimenting he did before he began eating honey, but he found that it agreed with him. For five years he has been eating honey in large quantities and very little other food. He has eaten as much as three pounds of honey in a single day. For lunch he has a section of honey and a glass of buttermilk. I don't know whether he eats the whole section. He is now sixty-four years of age, weighs one hundred and fifty pounds, and, best of all, he is turning out more work than he ever did before in his life. He himself told this to the head of the Puerden household, who was showing him around The Home of the Honey Bees. One rather strange feature of the case is that it must be comb honey. He says extracted honey seems to have lost that peculiar quality which makes it agree with him so well. He does not care particularly for the white honeys; indeed, he shares one strange taste with the Puerden family (all the family but Stancy, who hates it) in that he likes buckwheat honey and thrives on it. Mr. Puerden gave him a couple of sections of honey over a year old, and asked him to test them and report. He said in substance, "I can tell you right now if you wish to know about old honey. I like it and rather prefer it." His way of buying honey is to send for a section at a time until he finds some just to his liking, and then he sends back and gets the whole case. Don't you think he deserves the title "The Honey Man" even more than A. I. Root, for he must be literally made of honey?

I have told you this story just as it came to me. Don't jump to the conclusion that I am going to feed my two growing boys and small girl on an exclusive honey diet, altho it would simplify housework very much, wouldn't it? The Puerden family will still eat as well balanced a ration as I can manage, but my respect for honey as a food is increasing all the time. I wonder if Uncle Sam is not making a mistake in asking us to use honey to release more sugar for export. Perhaps if honey were added to the daily ration of the soldiers it would so increase their energy that the war would soon be ended!

ANOTHER STORY.

May I tell you another story? May be the managing editor will re-christen this department "The Story Hour;" but, honestly, these stories are true, and they just wouldn't keep.

Some years ago, when I had time to be a member of a literary club, the subject "Pure Food" was assigned to me. It was a good subject, but quite beyond my powers, and I began to look around for help. One of my brothers handed me a book, "Starving America," by Alfred W. McCann. Well, that book took hold of me and never let go until I had read it clear thru. I had always been more or less interested in food values, and considered myself fairly well informed; but that book was an eye-opener. My club paper was nothing but a review of the book, as comprehensive as I could make it in the limited time allotted me. When I finished reading the paper there was a little round of applause, and I had to make haste to disclaim any credit, as the paper was entirely from the book. Today Mr. Puerden called me up and told me Alfred McCann was on his way to visit The Home of the Honey Bees. I begged to be allowed to entertain him at lunch, and the powers that be thought it might be arranged. It was on Tuesday, ironing day; my young Hungarian helper was busy with the ironing; there were various vegetables threatening to spoil if I did not get them into cans—and the managing editor had just called me up (or down) to say my copy must be handed in at once. I told the managing editor he and the vegetables would have to wait. It pays to be firm with editors. Then I proceeded to prepare the following menu:

Broiled ground steak
Scalloped potatoes
Steamed summer squash
Tomato, green pepper, and cucumber salad
Hoe cakes Comb honey
Grapes

Everything but the meat and the cornmeal came from our own garden, and in a few weeks we shall have our cornmeal, home ground. So far as Mr. McCann was concerned the meat and grapes could have been omitted, for he ate neither. He cares little for meat if he can get fresh vegetables. He seemed to enjoy the potatoes, squash, and salad, and he ate so many hoe cakes accompanied by honey that he had no place left for fruit. We had been discussing food values, so I felt free to say, "Mr. McCann, do you mind telling me where you get your protein in a meal such as you have just eaten?"

"Where does the horse get his protein?" he returned quickly.

Then he went on to tell us that he firmly believes in a low protein diet; that he is convinced that almost every one eats more protein than is needed. But if we are to depend upon grains for our protein and mineral salts we must make sure we are getting the whole grain before it has been robbed of its most valuable constituents by the modern methods of milling.

Several have asked me if hoe cakes can be baked in anything but gem-irons. They can, and good ones too; but the irons are more convenient, as they can be heated so hot. Whatever baking-dish is used should be shallow, as the hoe cake must be principally crust when baked. We have had very good ones baked in aluminum muffin-pans. but the pans must be very hot, and the cakes baked thoroly until they are crisp and crusty. . Government experts have found that, considering its food value, cornmeal is the cheapest food there is; and as hoe cakes contain nothing but meal, salt, and water they form as cheap a food as can be found in these times of high prices.

Do I hear some one say, "Is Stancy Puerden ever going to stop talking about cornmeal?" No, I don't suppose I shall as long as the war lasts and there is need of wheat conservation. Have you noticed by the papers that our corn crop is the greatest this country has ever known? We ought to be very proud to eat cornmeal, for it is a food "made in America." America introduced Indian corn to the world. While cornmeal is such a valuable food for us, it would be of little use to ship it abroad under present conditions. It does not keep as well as white flour; and to be at its best it should be freshly baked and eaten hot. Stoves and ranges with ovens such as we use are almost unknown abroad. All the bread is baked in large public ovens; and in France particularly, wheat bread forms a very large part of the diet. If our Allies can stand between us and our common enemy while our nation is getting up an army to fight, surely we can make a little sacrifice in our eating. I signed one of the food-pledge cards, sent out by the Food Administration some time ago, and have tried to feed my family in accordance with its teachings. Recently our fourteen-year-old boy said, "Mother, you are getting up the best meals ever lately." He has evidently thrived on the meals he enjoys too, for he has gained ten pounds since last spring. Put it down to war diet, work in a war garden, or both, as you please.

On page 773 Dr. Miller asks if I have tried the method of putting a small piece of paraffin in the bottom of the jelly-glass before pouring the hot jelly in. I had read of that way several times, but my common sense told me that the jelly would not become firm if it were covered while still hot, as evaporation could not take place. However, to be able to speak with authority, I tried it, and the joke is on me. The paraffin hardened and covered the jelly nicely; and when I removed it the next day the jelly was as firm as that in the other jars waiting to be covered.

OUR THANKSGIVING DINNER.

Below is a Thanksgiving dinner which should not offend the Food Administration.

THANKSGIVING DINNER.
Maryland chicken
Dressing
Mashed potato
Creamed turnips
Pickles Jelly
Lettuce with French dressing
Whole-wheat bread
Pumpkin pie de luxe
Cheese
Mixed fruits and nuts
Coffee

Most of the materials called for should have been produced in your own or your neighbor's garden. Turkey may be substituted for chicken, if preferred; but if you eat turkey you are likely to have no money left for liberty bonds. For the dressing, use bits of bread and toast left from the table which have been dried in a warming oven and put thru a meat-grinder. Store the dried crumbs until needed in a jar with a thin cloth tied over it. Do not cover it with an air-tight cover or the crumbs will turn rancid. When you are ready to make the dressing, moisten the crumbs with hot but not boiling water. If the water is boiling the dressing will have a slippery texture. Season the crumbs with sage, salt, and pepper, and a bit of onion; put in a baking-dish with some of the liquor and fat from the roasting-pan dipped over them, and bake forty minutes to an hour. A beaten egg is an improvement, but may be omitted.

A dinner salad should be light. If you

Continued on advertising page.

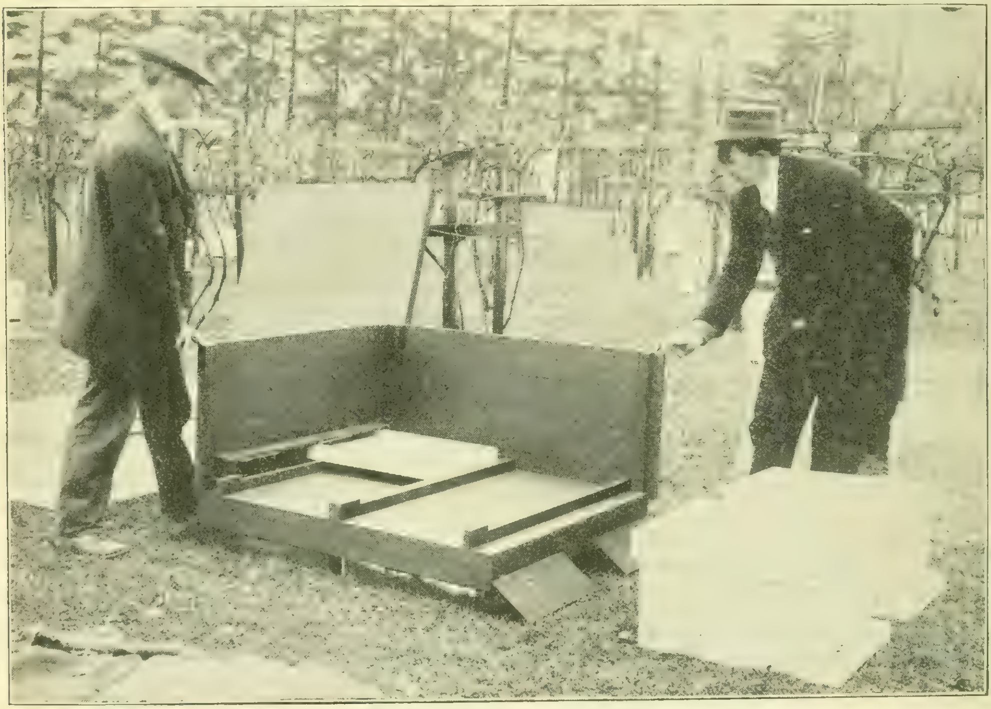
BEGINNERS' LESSONS

H. H. Root

MOST beginners will winter bees more successfully out of doors than in a cellar. Bees in confinement—that is, those in hives having no entrance to the outside—should never be wintered in a room above the ground where the temperature changes from one extreme to the other. If the colonies are left in such a room, each hive must be located close to the outside wall and must have a separate entrance so that the bees can fly whenever the weather permits. In a cellar where conditions are right, bees will winter in a semi-dormant state and will require no entrance to the outside. A cellar where vegetables keep perfectly is usually considered safe for bees; but for best results the temperature should not go much below 40 degrees F. nor above 50. For two or three colonies no special provision is needed for ventilation; but the air should be reasonably dry. It requires some experience, however, to know just when conditions are right—when to put the bees in and when to carry them out in the spring; so in the majority of instances outdoor wintering is the safest for a beginner.

Except in localities far south, extra protection other than that afforded by the single-walled hive is necessary. Even in the south-central states, winter packing is beginning to be looked upon as a wise precaution—safety first.

Winter cases are usually for one hive or four hives, altho two-hive cases are coming into use somewhat. The amount of packing depends upon the latitude, also upon the amount of exposure to cold winds. A colony in a spot protected by trees, buildings, or other shelter, and with only two inches of packing, will winter better than one in a hive having six inches of packing, but standing right out in the open where the bleak winds have a full sweep. For a single hive, or even for two hives, a common store-box may often be used enough larger to give about six inches of space at the sides and top for packing material. Of course the passageways into the hives must

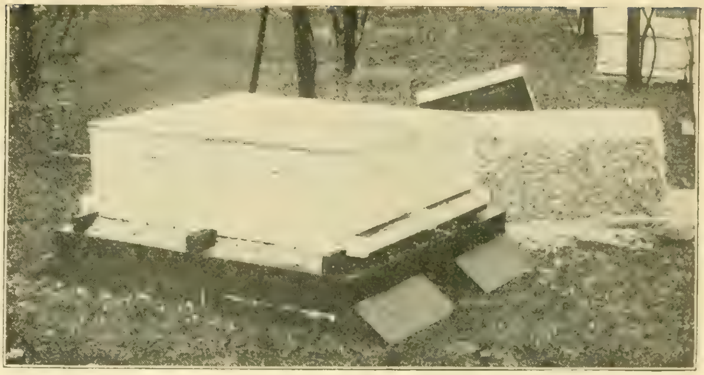


Special floor-board, cleated to hold two pairs of hives back to back. Two sides of the winter case are held in position to show the relative position of the parts. "A bridge" across the entrances prevents the packing material from closing the opening into the hives.

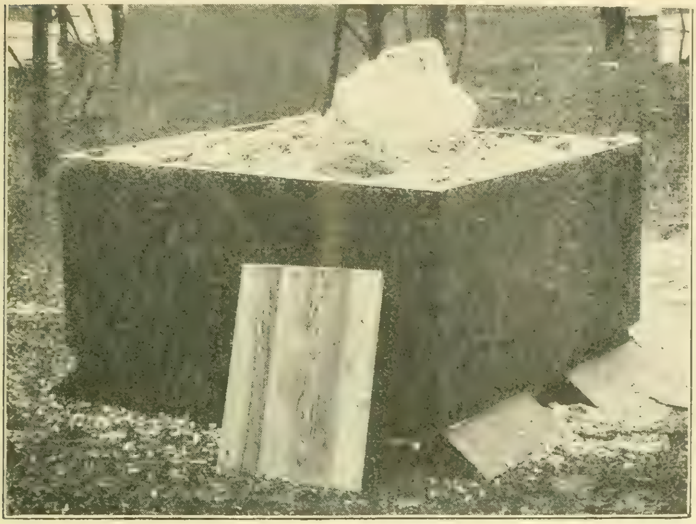
be bridged over so the packing will not fill up the entrances. A water-proof cover must always be provided; for the packing material, whether it be dry leaves, chaff, or fine shavings, must never get wet.

The four-hive case is the same in principle, altho it is seldom that a box large enough can be found, so the case has to be made for the purpose. If not already standing in a group the four hives must be brought together gradually, each hive being moved only a few inches a day so the bees will not become confused. After being located on a platform, the two pairs standing back to back, the sides of the case may be nailed or screwed together at the corners and the packing added. Aside from the expense there is no objection to even eight or ten inches of packing. The material should be packed down just enough so that it will not settle.

A winter case may be put on any time after the colonies have been fed, and it may be left on in the spring until all the cold unsettled weather is over. In fact, this method of wintering is more nearly "fool-proof" than any other, and with plenty of young vigorous bees, good stores, dry packing, and a sheltered location, the beginner may snap his fingers at Jack Frost.



The four hives in position ready for the sides of the packing-case.



The walls in place and the packing material added.

The water-proof cover finishes the winter case.

GLEANED BY ASKING

E. R. Root

H. S., Ohio.—I have a lot of unfinished sections from goldenrod. If I put these under the brood-chamber will the bees take out the honey and carry it up? or would it be better for me to put them on top of the brood-chamber next spring? If the bees take the honey out of the sections, would they be travel-stained?

A. We would not advise putting the sections under the brood-nest at this time of the year. Put on an upper story; place the unfinished sections, if the colony is short of stores, on top of the brood-nest. Over the whole, place a burlap or carpet, and then pour in packing material. If the colonies are well supplied with stores in the brood-nests we would not advise giving the sections this winter, but wait till next spring, at which time they may be given in the manner explained. We would not advise disturbing the brood-nest or colonies at this time of the year if they have sufficient stores to carry them thru to next spring. The sections might be soiled some if put on the hive as explained but not badly.

V. C. P., Illinois.—Kindly advise me in regard to the best method to use in the manufacture of honey vinegar. I am advised that vinegar made of a solution of rainwater and honey is superior in quality to other kinds. At what degree of concentration should I have the solution? I have access to a commercial hydrometer for testing the specific gravity of liquids heavier than water.

A. It is true that vinegar made of honey is superior to any other article on the market, even cider vinegar. The one difficulty, however, is that the honey vinegar costs more than cider vinegar; but it is enough better to warrant the extra price. However, a great many beekeepers will have considerable honey washings from utensils, especially during extracting. These washings can be set aside and converted into vinegar. Enough water must be added to the honey so that the liquid when thoroly stirred will just support a fresh egg, leaving a portion of the eggshell sticking above the water by about the size of a ten-cent piece. This was the rule given by Mr. E. France. Others who use the ordinary hydrometer say that the scale should register at about 11. This liquid should, of course, be kept in a warm room to hasten the action.

J. M. C., Alabama.—I wish some one would tell us how to keep bees from robbing feed-troughs where people are feeding velvet-bean meal. The bees run the cows out and take possession—also try to take possession of the mill where they grind the beans. The miller has to use smoke before he can measure up the meal.

A. There is really nothing that can be done except to see that the bees are liberally supplied with natural pollen in the combs the fall previous. A " counter-attraction " may help somewhat; but by the time the bees get started on meal fed out by the beekeeper they will find natural pollen, which they much prefer, and ignore both the feed-troughs and the counter-attraction. Where the bees have given trouble in the past, it would be well for the local beekeeper to have rye meal exposed under sheds, where the sunshine can get at it, and where they will find it before they will go to the feed-troughs on a neighbor's farm. The trouble will last for but a short time, and the beekeeper would do well to sweeten up the neighbors with a dozen or so sections of honey or a gallon or two of extracted. Above all things, the beekeeper should see his neighbors and sweeten them up before the bees get to working in the feed-troughs if the trouble has occurred before.

A. L. B., Indiana.—I once had bees cluster in a funnel shape in the super where there was no honey. The small end of the cluster reached down into the brood-chamber where there was honey. They were in this position several weeks in cold weather. How did the big end of the cluster get honey to live on?

When a colony forms three clusters between four combs, has the middle cluster any better chance to pull thru a cold spell than the outside clusters?

Sometimes there is a little cluster of live, dead, or dying bees entirely away from the main cluster. Why those little clusters?

I have a full-depth super full of extracting-combs on an American-foul-brood hive with queen-excluder between. Is it safe to use the extracting-frames and super this season without treatment?

A. When bees cluster, the same bees do not remain in the same part of the cluster very long. If you watch closely you will find that there is a constant changing, the outside bees getting to the inside and the inside bees to the outside. If the weather happens to be very cold, and the cluster is spread out considerably, some parts of it may be cut off from the main part. This accounts for a few bees found in a starving or chilled condition off at one side.

Under ordinary circumstances the bees when clustered on combs are so compact that they are practically one solid mass. The bees enter the cells and thus conserve the animal heat. There is a slow and almost imperceptible changing of bees, even when compactly clustered, and for this reason all of them stand about the same chance.

You run great risk in using extracting-combs over a colony diseased with American foul brood, for these combs may contain a little honey. Furthermore, there may be some dried scales of dead brood reared in the combs before the excluder was put on. Our advice is, not to use any such combs. It is not safe.

It would not be safe to use the brood-combs from the lower story at any time. It is always safer to melt those up in case of American foul brood. Then scald the frames and burn the inside of the hive-body with a gasoline blow-torch until the wood is scorched.

C. H. H., Wisconsin.—How can I move bees without giving them a flight in the spring before moving them? I have 200 colonies in a cellar in Minnesota, about 150 miles from here, and I want to move them as soon as possible in the spring, and it would save me some expense and much trouble if I could load them as I took them out of the cellar; but I did not think it would be safe to load them without first giving them a flight.

A. A good deal will depend upon conditions. If the bees go thru the winter without any signs of dysentery, and appear to be otherwise in good condition, we see no reason why you could not load them direct from the cellar on to the wagon or automobile truck. If the hives are spotted up in front we would advise letting the bees have a flight before moving them.

A. J. D., Massachusetts.—I have tried double-walled hives, but do not like them, because they have a tendency to sweat inside. This makes them very damp in all seasons.

A. There is no more reason why a double-walled hive should be damp inside than in one with single walls. As a matter of fact, the double hive should be dryer, because the moisture from the cluster of bees will not condense so readily. Cold will penetrate thru a single wall much quicker, and when the warm breath of the bees strikes the cold sides the moisture will condense. Your climate is somewhat damp, and your difficulty can be remedied by putting a burlap over the top of the brood-nest rather than a solid board cover. Over the burlap should be placed packing or a tray of packing material. The moisture will go up into the packing, leaving the inside of the hive dry.

O. S., Virginia.—I use Danzenbaker hives and 4 x 5 section-supers. Next year I wish to produce extracted honey with shallow Danzenbaker frames in these supers, also the full-depth hive body. Is it not a good plan to put one of these shallow frames on each side of the sections? What size of extractor will I need for these frames?

A. In producing comb honey there is a decided advantage in placing a shallow frame on each side of the sections. As bees prefer the comb, they begin work in the super much more readily. For extracting Danzenbaker combs you will find the standard extractor to be quite satisfactory.

C. E. P., Minnesota.—What is the proper temperature of a bee-cellar for winter?

A. In former days 45 degrees Fahrenheit was considered the right point; but the tendency now is toward a higher temperature—say 50 degrees. But with this higher temperature there should be plenty of fresh air or the bees will become very uneasy before spring. If the ventilation is limited, a temperature of 45 degrees is better. Where a furnace is used in an adjoining cellar a temperature of 50 or 55 degrees may be used to advantage; but there must be a window in the bee-room thru which ventilation can be secured from the outside. If the furnace-room door is left open slightly there will be a constant change of air. During extremely cold weather it may be necessary to close the outside ventilator.

A. N. C., New York.—Is it practical to unite three or four two and three frame nuclei in November?

A. They can be united; but such a colony is never as good as a fair or medium colony all from the same queen and from the same hive. These small nuclei when united never seem quite to make up a normal colony—probably for the reason that the several families do not immediately form into a homogeneous mass. Moreover, the mixture of combs, each containing some stores, leaves the food scattered. When a colony is united in this way it should be fed thick syrup.

C. J. F., Illinois.—It is generally recommended that colonies be not shaken for American foul brood late in the fall. Is it possible to unite two or more colonies after shaking them on to foundation? I do not wish to have any foul brood around next spring.

A. This can be done; but 24 hours after uniting on the foundation the bees should be fed on thick sugar syrup—2½ sugar to one of water—and the syrup must be given hot. It may be advisable to give another feed after the bees have drawn out their combs partly.

C. H. W., Michigan.—Can liquid food be given to bees as late as Nov. 15?

A. Yes; but the syrup should be 2½ parts of sugar to one of water, and it should be given hot. We have had colonies winter fed late on food composed of 2½ parts of sugar to one of water, and they came thru in nice condition. As a general rule we advise earlier feeding if it is needed—not later than Oct. 1, for most northern localities. The bees can then place their stores properly, seal them over, and form a winter nest. Hot syrup for late feeding should always be given at night, to prevent the bees from flying out and becoming chilled if the weather is cold.

A. C. L., Wisconsin.—Could a ten-frame colony that covers all of its combs with bees on warm days, in October be crowded into less space with division-boards on the sides?

A. It is advisable to take a couple of combs having the least stores and crowd the bees down into the smaller space. It may be advisable, in case of a colony not too strong, to crowd them into a six-comb space; but the combs should be full of stores; and if not, the bees should be fed. See article, p. 842, on DeMuth's method of bee-wintering.

P. P. A., New York.—I have trouble in making my labels stick to tin. Can you help me out?

A. Ordinary paste will not hold a label on tin as well as on glass; however, very good results can be secured by purchasing dextrine, which usually can be obtained of the dealers or at the drugstore.

HEADS OF GRAIN FROM DIFFERENT FIELDS

An Effective Way to Get Rid of Any Ants Living in the Ground

I notice in Gleanings, February, page 131, Mr. C. E. Fowler's method of trapping ants by means of a tub containing a small amount of water. I think I can give a better remedy than that, especially for ants that den in the ground.

Trace the ants to their den by watching the line going to and from the hive. Then take a small funnel and pour a little kerosene oil into the den and close the hole. By using a funnel one gets the oil in the right spot with very little waste. The oil should be poured in until it fills the hole. A cupful is enough to destroy two or three dens. I should be glad to have some of the beemen try this method, as I have tried it successfully for three years. N. E. Davis.

Roxboro, N. C.

* * *

Too Much Air Pumped Into the Honey

Our honey is warmed to 130 degrees, and then strained into a tank from which the pump in the basement raises it 16 feet thru a pipe that runs from the top of the extracting-house to the honey-house where the honey is run into two tanks, one upstairs for filling small pails, and one downstairs for filling 60-pound cans.

I tried first to run the pump all the time, but the honey got cloudy from pumping so much air with it. After that I allowed the tank in the basement to fill up and stopped the pump when it became empty. That works all right, only I have to take care that the honey does not get so cold that the pump will not handle it.

This year I had some 30,000 pounds of honey, and have sold over half of it. I run a regular mail-order honey business, and sell almost entirely to consumers. As demands are on the increase every year, I am never worried about selling my honey.

Brush, Colo. Daniel Danielson.

Bee Convention No Place to Settle Beginners' Questions

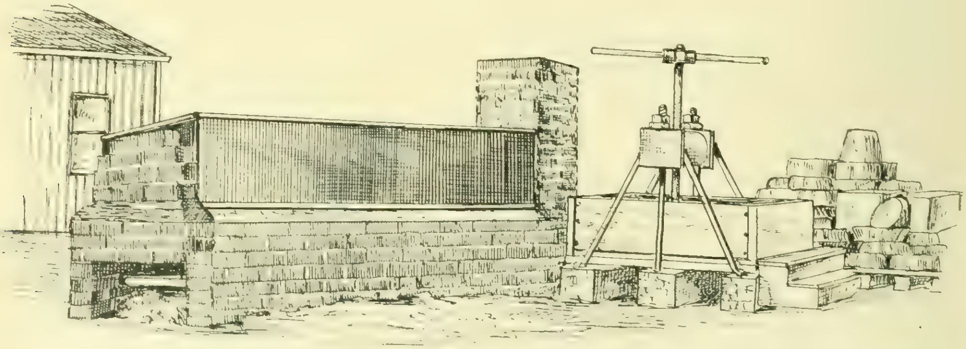
Those who attend beekeepers' conventions merely to learn are making a big mistake. The place to learn beekeeping is right at home. For what purpose do we have all these extensive works on bees and bee culture? Why are such journals as Gleanings, American Bee Journal, Domestic Beekeeper, etc., issued? Why the bulletins on this subject? Let the beginners particularly understand that these state and national conventions are not held for the purpose of teaching them the "A B C of Bee Culture," but for the purpose of acting.

I would not overlook nor belittle the social advantage afforded by our bee-meetings; and a beekeeper may well spend money and time in travel in order to become acquainted with others who are engaged in the same pursuit with him. Surely attend if it is possible; but the time is too valuable to thrash out beginners' questions. No man can afford to travel many miles to go to such big conventions solely for the purpose of learning.

The Standard Oil Company may be able to map out a yearly program in a few hours, but the beekeeping fraternity is not as fortunately situated; it has thousands of stockholders with a diversity of interests; they are scattered over the whole of the United States, and it is not a very simple matter to map out a program for such a body. Furthermore, should ever so good a program be mapped out by those who take the lead, the next thing would be to have the members stand by it. This is where we fail, and always have failed.

Local associations and county societies hold beekeepers' institutes for the purpose of instructing beginners. Here any simple question may be asked and answered, or more complicated questions discussed, but the state beekeepers' convention is not the place for it. F. Greiner.

Naples, N. Y.



Danielson's comb-melter and wax-press.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Awakening Interest in West Virginia We have just had another proof of the increasing general interest in beekeeping that has been lately developing thruout the country. At the annual field meet of the Panhandle Beekeepers' Association held Aug. 22 at Triadelphia, W. Va., the Department of Agriculture of West Virginia considered it worth while to have a "movie-man," N. E. Mehrie, of Charleston, W. Va., attend the meet and make a film of the doings. Chas. A. Reese, assistant entomologist, of West Virginia Dep't of Agriculture, was instrumental in obtaining these pictures, which we understand are now being used in the central part of the state. They were taken solely for educational purposes, and are to be shown in the theaters wherever desired by the local beekeepers' associations.

We had a very profitable time at the meeting. Not all the speakers were there, but all of the inspectors were present and each one gave an interesting talk.

Elm Grove, W. Va. Will C. Griffith.

A Suggested Variation of the "Put-up Plan," for Swarm Control Dr. C. C. Miller:—In case of swarming with the two-story plan, when do you usually have the swarming—before or after reducing to one story? How do you usually treat them? If more than one way, please give the most common one.

I suppose that all the different ways in "Fifty Years" refer to using only one ten-frame body, not to two eight-frame stories for brood-chambers. How would the following modification of your "put-up" plan work, when using two eight-frame brood-chambers? When the swarm issues (clipped queen), or several days later, shake the bees off the frames of sealed brood in front of the hives, putting these frames and queen with a few bees in a hive above the cover of the other hive, which will have the unsealed brood, nearly all the bees, and supers. Put the combs of honey or pollen in either hive, according to the amount of sealed or unsealed brood and of course cut all of the queen-cells. In a week, put down the queen,

West Virginia beekeepers getting in the limelight. A "movie man" was engaged to take pictures at the Panhandle field-meeting Aug. 22.

leaving the upper hive until the brood all hatches, cutting cells if necessary. Then shake the bees in front of the lower hive, keeping the combs to be used as a second story the next year. Would these combs be reasonably free from honey and pollen?

Lincoln City, Del. C. A. Colell.

The two stories are left only until time for supers, when all are reduced to one story (not ten-frame, as you say, but eight-frame, altho it is possible that ten-frame would be better for all the time); and swarming practically never occurs until there is only one story. Then the treatment may be any of the plans given, perhaps as common as any being the "put-up" plan.

The plan you propose would leave the combs containing considerable pollen and honey, the amount depending on how much brood was present at the time of swarming; for at that time the combs would be full, and any cells not containing brood would be filled with honey or pollen. Frankly, I don't believe your scheme to keep over these combs without any bees on them would work out very satisfactorily. C. C. Miller.

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How the Bees Helped on the Fruit-Farm Miss Euphemia M'Isaac, the owner and operator of the Cranford farm, near Benton Harbor, Michigan, had a King apple-tree that would not produce fruit. She sprayed it, scraped its bark, trimmed its branches, but the King simply kept on soldiering on the job, and the owner was without any recompense save that of its shading branches which kept the sun from one end of the porch.

Miss M'Isaac then turned to the last resort. In proper season she located four colonies of bees right under the tree, whereupon the little workers fell to an immense pollenization job.

This year the tree seemed to make up for its failure of other years. There seemed to be an apple for each blossom, and Miss M'Isaac is giving most of the credit to the bees.

Miss M'Isaac is a city-raised woman, who with her sister left off nursing humans in a city hospital to nurse soil into producing fruit in Michigan. Her success has been pronounced. She now conducts an eleven-acre place on a hilltop. In thirteen years she has not had a crop failure. She keeps about ten colonies of bees. They work on fruit-bloom in the early season, and on buckwheat, which she sows between the rows, later on. J. L. Graff.

Chicago, Ill.

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Does the Public Like the Darker Honeys? On reading the article by A. C. Miller on page 600, August, we are not sure that we quite agree. We have three grades of honey here—the spring (or dandelion) honey, which has a light-yellow color; the clover and alfalfa, which is white, and the fall flow, a mixture of clover and rabbit-brush. We try our best to keep these three grades separate, extracting from the brood-nest about June 10 in preparation for our alfalfa flow; then in July and August we extract in order to be ready for our fall flow about Sept. 1. If we did not do this, we should have a dark honey thruout the season. We do not feed

Miss M'Isaac's home and apiary. Ten colonies of bees are kept, principally for pollenizing fruit-blossoms.

sugar, but let the bees winter on any sealed honey they have.

The three grades are sold at the same price, and we feel that we give value received. The public has learned to know the difference in the grades, and yet to buy and eat it all. They buy the darker grades in 5 or 10 lb. lots, some of it for winter use, but most of it for summer, since it is just as good for canning fruit, and while in the liquid form is quite as good to eat. Then for winter use we fill the five-gallon cans with our white honey, as it granulates with a finer grain than the darker honey, and also has a better flavor after granulation.

We stand behind every can of honey we sell; and people know that, if they are not satisfied, the money will be cheerfully refunded. But so far we have never had a single can come back, which seems to prove that the dark honey has given good satisfaction. M. L. Skougard.

Parowan, Utah.

* * *

Disturbing the Bees in the Cellar

Some beekeepers say in effect, ''Don't monkey with the bees in the cellar during the winter.'' Well, it may be good advice to some people, and perhaps to most; but I have a habit of placing all light colonies where I can ''monkey'' with them.

Of course some will immediately exclaim, ''You should not have light colonies,'' and I at once reply, ''Locality!''

Our honey-flow often does not start till August and lasts till the first heavy frost in September, and it may happen that some particularly good honey-gatherers have a craze for putting it in the supers and leaving the brood-chamber weighing only 50 pounds—cover, bottom, and all. Then a heavy frost may be continuous for a few nights, succeeded further by such chilly weather that it is difficult to feed. And now a further excuse: I have to help with the thrashing and we and the neighbors are always short of help. Thus it results that there are always a few light ones to go into the cellar.

About New Year's day I open the light hives and lay a frame of honey on top. Sometimes I draw out an empty and insert one near the cluster. So far I have never seen anything wrong with this practice. Of course the queen starts laying. Last year I fed only one, which was a weak colony with a fine-looking queen of good Italian stock; and when I carried that hive out in the spring there were ten frames of fine-looking bees. I fed some combs of honey and divided, getting a queen from Alabama, and soon had two strong colonies.

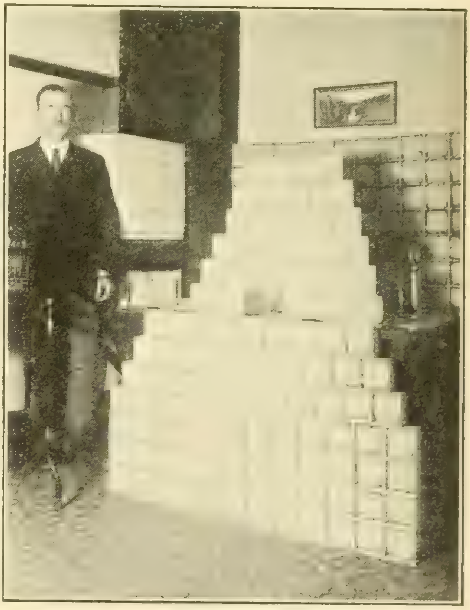
There was one fly in the ointment, however — the queen of the fed colony soon started laying drone eggs too frequently, and I was obliged to kill her and introduce another at a cost of 75 cents. Taken all together I consider the increase I made in the winter as profitable as any manipulation I ever made with bees. I have four or five hives at present; and if I have continued success I plan to build a new cellar with more room and to keep all late swarms apart for cellar increase. W. J. Boughen.

Valley River, Manitoba.

* * *

Good Returns from a Colony in a City Block

The accompanying picture shows the honey I took from a colony of bees which I have in my office on the third floor of the Vatet Block at the corner of Jackson and High streets, Muncie, Ind. This colony is located in the center of a city of about 28,000 population, and yet I took from them last season 252 sections of honey. I think this a pretty good production for such a location.



Honey produced by one colony in a third-story window of a city office building.

The bees were in an observatory hive which I placed in my office in order to create an interest in bee culture among the schoolchildren of Muncie and Center Township. As it turned out, I learned a few facts myself—one being that bees consume great quantities of honey. I also learned that, tho the temperature of the room was never lower than 65 degrees, still the queen did not begin to lay until about March first.

Muncie, Indiana. W. D. Carter.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Honey-house and Hives are all Home-made

The accompanying illustration gives a view of our bee-house and workshop, also showing a part of our apiary. The house is 12 x 24 x 8 feet, is built on concrete foundation, and cost $114.14 for material. The work was done by myself, as I happen to be a carpenter. The hives too are home-made, but do not look much like the usual hives made of dry-goods boxes. C. Klabuhn.

Conneaut, Pa.

* * *

Empty Super if Above Gives Comfort; Below, Prevents Robbing

Dr. C. C. Miller:—Suppose the main honey-flow this summer should end about Aug. 1, as it frequently does here, and all comb honey were removed from the hive (Buckeye), how would it do to place an empty super on the hive for an air-space so the entrance might be contracted to prevent robbing? I should like to leave the bees for two weeks at that time, and I fear things might go wrong in my absence. No doubt you could tell me of a better scheme. J. H. Diebel.

Columbus, Ohio.

If I get your idea, it is that during your absence you want to leave the bees only a small entrance, so they will easily protect themselves against robbers, and lest there should be any approach toward suffocation you plan to put an empty super on top, so as to give more air.

If there is no robbing immediately before your departure, with colonies reasonably strong, it hardly seems possible there should be any robbing, even with full entrance. But suppose you do contract the entrance, with no other precaution. If it becomes uncomfortably warm there is nothing to prevent the bees from coming out to sit in a bunch at the entrance where it is more comfortable. Still, your empty super on top would probably make it at least a little more comfortable, and could do no harm. It is just possible those bees might take it into their heads to store a little surplus while you were gone, in which case the super would come in handy. But while you're about it, if you are flush with empty supers why not put one under as well as on top? Robbers are averse to crossing any confined space where they cannot take to immediate flight if attacked, and the empty super below would tend to safety, even without any smaller entrance. C. C. Miller.

* * *

War Prices in Denmark; Crop About Thirty-two Pounds per Colony

For several years I lived in California and kept bees as a side line, until ill health caused me to leave for Denmark. A year later my father died, leaving me to look after his work, which included the care of about thirty colonies. I am going into this work in a more extensive way and am trying my best to make things move. I am taking up American methods of beekeeping and have also started commercial queen-rearing.

No one here uses the Langstroth hive; but in time they probably will, when they find how much easier it is to handle. I have twenty home-made ones now in use. In this country we have to use the double-walled hive, as the weather is very changeable in the spring and early summer when brood-rearing starts.

In the past three years I have made a

Papaya tree on the honey farm of U. Trista, Santa Clara, Cuba. See editorial.

HEADS OF GRAIN FROM DIFFERENT FIELDS

fair surplus; but this year was the best, my bees giving me from 20 to 125 pounds (Danish weight), which measure is a little more than the English pound. All together from 25 stands, spring count, I received 800 pounds. On account of the war, prices are up and we are getting from 30 to 40 cents a pound, which is more than we have ever obtained in this country.

Altho there was a heavy loss in bees in the winter of 1915-16, many old beekeepers having a total loss, still those having a few stands left were enabled by the unusual swarming to increase their number of colonies and to obtain a fair yield the same year.

The weather from early spring till the latter part of June was very cold; but the first of July it became warm, and the wild wisteria gave us quite a little surplus. In some years we get our sole crop from this plant. Then the white clover came on, and from then until August the bees gathered quite a lot of honey.

Tobjerg, Denmark. James Clausen.

Second-Hand Vinegar-Barrels Unsafe for Any Kind of Honey.

Would it be all right to put buckwheat honey in used vinegar-barrels that are scalded out?

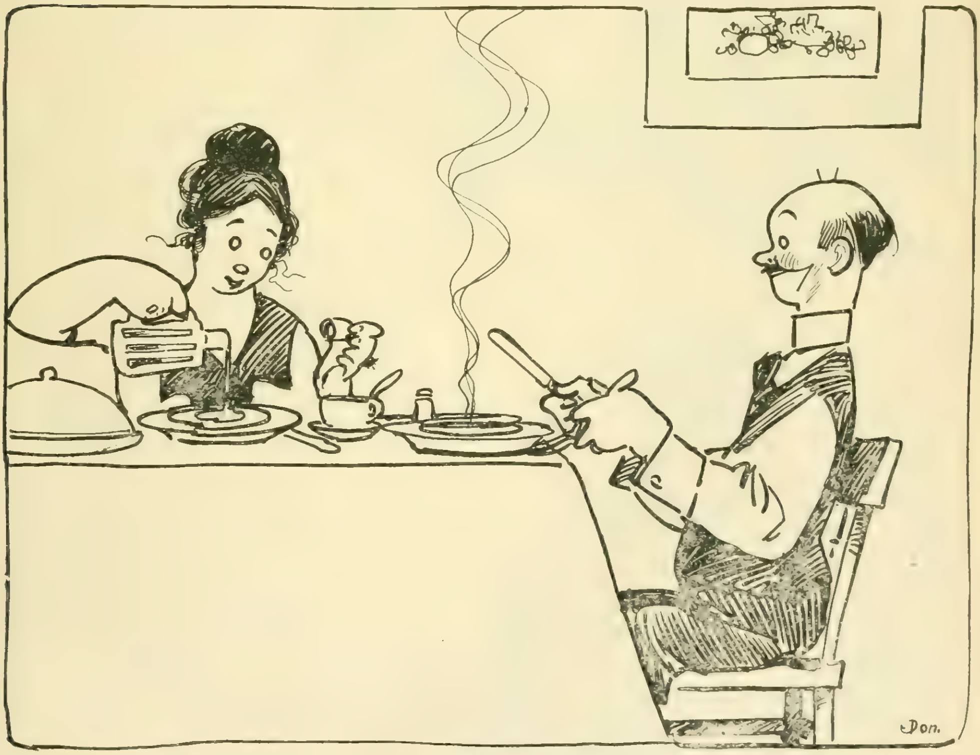
Grawn, Mich. Howard Anderson.

[We would not recommend the use of second-hand vinegar-barrels. The staves would be soaked up with water, and the honey, after it had absorbed this water, would be almost sure to leak out in spite of all you could do. Using second-hand barrels is a rather risky proposition any way; and in case of vinegar-barrels, in addition to the danger of the shrinkage of the wood we are afraid the honey might be injured.—Ed.]

* * *

When in immediate need of a queen-cage in an outyard, roll a strip of foundation from a section into a cylinder ¾ inch in diameter and pinch the end down together. After securing the queen, close with another strip. E. C. Bird.

Boulder, Colo.



THE BACKLOT BUZZER.

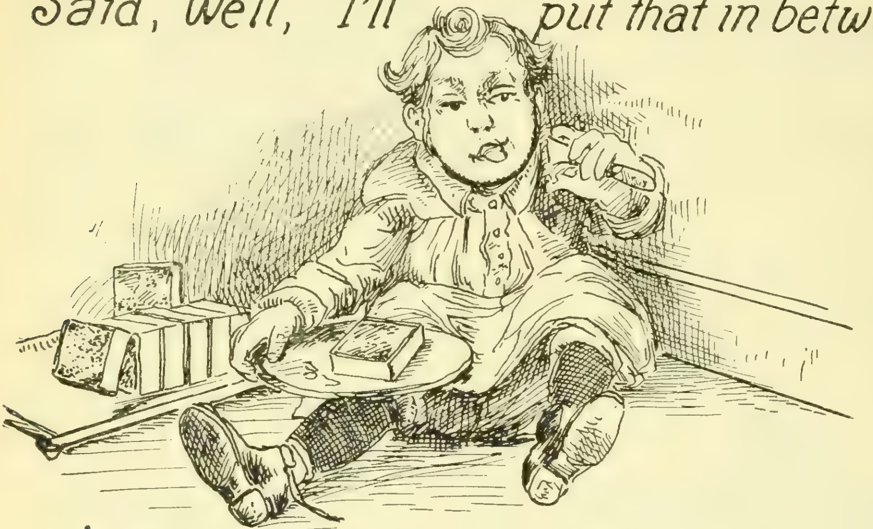
BY J. H. DONAHEY.

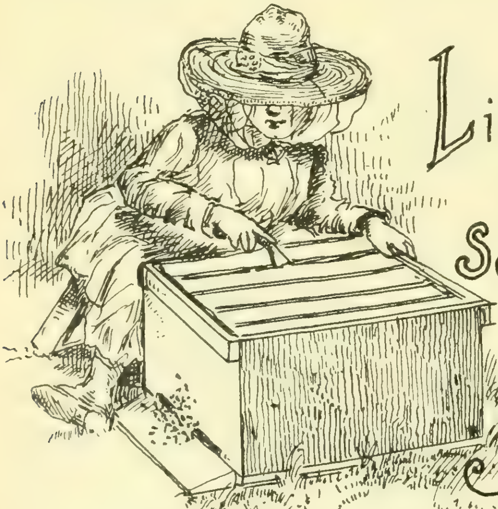
Speakin' of honey, what's the matter with buckwheat cakes and honey, or buckwheat honey and buckwheat cakes? Say, Maw, pass the honey.

Mother Bee NURSERY RHYMES,

By M.G.P. (Mother Goose Plagiarized.)

Dishonest Horner sat in a corner,
Scraping his sections clean.
He stuck in his thumb, and then looking glum
Said, "Well, I'll put that in between."





Little Bee Lover
Sat on a cover,
Scraping the burr-combs away,
Along came a worker
But she was no shirker,
And so she decided to stay.

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

No greater cause for disease can be found than the lack of abundant stores, which means weak colonies, the easy prey of disease.

* * *

Scarcely a day has passed since mid-August that smoke columns have not announced brush fires of magnitude. In the region of Perris, Riverside County, the Cleveland forest reserve, and near Filmore and Sespee, the greatest damage has been done. Many square miles near Sespee were devastated, with reported loss of life and bees.

* * *

With our Government placing sugar at a figure of about eight cents, with the possible restriction of the amount used per capita, we are led to wonder if honey will be left in the unrestricted luxury class as is now the case in Europe or whether the price will also be fixed by the Government. Whichever it may be there is little danger of 7-cent honey for some time to come.

* * *

The draft net has caught many of the younger beekeepers of our state. We ought to lend a helping hand where desired in keeping secure their holdings until they may return. War is not to the liking of any of us; but when necessary, as in our present situation, those who bear the brunt of the dangers should not be forgotten by their fellow-beekeepers who may be able to help them out during their absence.

* * *

I am glad that no less a personage than the editor of the *American Bee Journal* has come to the same conclusion as myself regarding capping-melters. In an article on page 345 of that journal he says, "In fact it is impossible to secure out of the capping-melter anything but an inferior quality of honey. For that reason we have discarded the capping-melter." That has been my contention for a number of years. I have stuck to the capping-box and the solar extractor as a means of securing the best possible quality of honey, altho I have been classed as antiquated in that respect. Now I have at least one man of authority on my side of the question.

* * *

Wesley Foster in *American Bee Journal*, October issue, page 339, says, "Light amber honey of equal flavor is worth as much as water white: and the time is coming when it will bring the same price." In this I feel that Mr. Foster is mistaken. The one factor alone, that dark honey predominates, will always leave a demand for white. Besides, honey is not sold over the counter by the flavor as much as by looks, and no one can deny that looks dominate the world to a large extent.

In the same article Mr. Foster says: "The fact is that the average beekeeper does not know within two cents per pound what his honey is worth at his station after he has read the market reports." In this I believe he is entirely correct. At one time this spring the price advanced nearly five cents in a week's time, yet the advances were not reported by some of our weekly papers that were depended on for quotations until the second week after the raise.

* * *

There have been no articles in recent issues of Gleanings that have appealed to me so much as that of J. L. Byer on page 755, October. His remarks on the size of hives are well worth the time of reading. After quite a long experience in the East, I cannot but feel that cellar wintering will become a thing of the past in years to come. I never had a colony die from the cold where normal conditions existed and plenty of stores were provided. One significant statement of Mr. Byer's struck me as exceptionally good: "No, it is not a question of size of hive, but of adapting *radically different management to radically different hives.*" In this I believe that Mr. Byer is entirely correct, yet I would not for an instant advocate several different types of hives for any one beekeeper or even for one community. One style of hive for an individual beekeeper should be adhered to for the reason of economy, unless such style should be entirely antiquated in the community. There is no question but that there is a big advantage in having hives like the prevailing type in the community. A standard style is desirable, for it is almost impossible to sell or exchange to other beekeepers odd sizes or odd styles of hives. In California the neighborhood of beekeepers includes the whole state, and the prevailing style of hive is the L. ten-frame. There are many eight-frame hives, but I believe they are going out rapidly in many places. My personal choice would be a frame slightly shorter than the L. size but deeper, with ten frames in a body slightly wider than the L. size. But as I am in a community where the standard L. size predominates and have learned to work them to my entire satisfaction, as Mr. Byer suggests, I am satisfied, not only with the style but in the knowledge that the L. standard is perhaps the nearest perfect of any in the market today.

IN TEXAS

F. B. Paddock, State Entomologist

REALIZING the growing needs of the beekeeping industry of this state the faculty of the Agricultural and Mechanical College of Texas is now providing courses in apiculture. These courses were adopted in 1916 and are offered this year for the first time. The courses were prepared by and will be under the personal direction of Prof. S. W. Bilsing, of the Department of Entomology. There are now many students attending the Institution who are directly interested in beekeeping at home, and there is every reason why they should be given an opportunity to further their knowledge of this industry. These courses will fill a long-felt want in this state, which stands at the head of the list of the honey-producing states.

The first course is offered to the students of the regular four-year college course. It will consist of classroom lessons supplemented by laboratory practice. This course is required of all students in the Entomology group, and is elective to all students taking the Agricultural course. Included in the course is a study of the history and development of the beekeeping industry from early times; a study of the biology and life-history of the honeybee; races and types of bees; apiary management which will include a study of honey production and marketing of the apiary products; honey flora of the state; apiary by-products; elementary queen-rearing, and a study of bee diseases. In addition to the lectures and recitations supplementary reading of the beekeeping literature will be given to enable the student to become fully acquainted with the modern problems and workers of the industry. In the practice work the student will have an opportunity to study and assemble all makes of equipment and accessories, and can thus learn the uses of all the modern beekeeping appliances. Actual apiary practice will be given, and a study will be made of some of the larger and successful apiaries of the state.

The second course is offered to the students of the two-year course in agriculture. This course will follow the general outline of the first course, except that the more technical phases of the subject will be omitted. Particular attention will be given to conditions as they are related to the farm life of this state. The practice work given with this course will be very similar to that given with the first course. The students will be given an opportunity to handle the bees in the apiary, with an idea of improving conditions of beekeeping as an adjunct to the farm.

The work in both of the courses is offered during the second half of the year. This will enable the students to get that phase of the subject most needed.

The Department of Entomology is now well equipped to give these courses to the students. The apiary is at present small, but will be enlarged as the work in the courses demands. This will give the students an excellent opportunity to see what can be done with a small start. Queens of the best type, produced by Texas breeders, will be maintained in all of the colonies. This will afford the student a chance to study the different strains of the various races of bees. Honey production from various angles will be brought to the attention of the student. The equipment includes automatic honey-extractors and wax-presses.

A honey-house will be built in the near future, it being provided for by the last Legislature. Prof. Bilsing is now gathering data, and will plan the house along the most approved lines. Room will be provided in the house to accommodate the classes in apiculture.

The objects of the courses in apiculture may be briefly stated as follows: 1. To improve the beekeeping conditions of the state; 2. To encourage the keeping of bees on more farms in this state; 3. To train the students to act as investigators in apiculture, and to train students who may be qualified to serve as foul-brood inspectors.

ASSISTANT ENTOMOLOGIST IN CHARGE OF FOUL BROOD.

On October 1 Mr. W. E. Jackson assumed his duties as Assistant Entomologist of the Texas Experiment Station. As such he will be in active charge on the foul-brood-eradication work in this state. Mr. Jackson comes from the Oklahoma Experiment Station, where he has been employed for two years. In addition to his excellent training Mr. Jackson has had several years of experience in practical apiculture, having operated his own apiaries, and later having had charge of the largest apiary in Oklahoma. He will devote his entire time to the foul-brood work in Texas, a part of the general plan of increasing the efficiency of the service, as provided for by the last Legislature. It is felt that much good will come from the closer contact of the State Entomologist's office with the beekeepers of the state as a result of this work. Many new counties will be organized under his direction for the fight against foul brood.

ORGANIZED EFFORT AGAINST BOX HIVES.

The Anderson County Beekeepers' Association is again doing things. There have been a great many box hives in the county, and the association is doing everything possible to correct this evil. Last month the officers of the association prevailed upon fifty of these box-hive beekeepers to transfer and put new queens in their hives. The 50-queen order was placed with a queen-breeder in an adjoining county, who agreed to deliver them in person, and to introduce them without extra charge. Receiving such a large order, and from an association, the queen-breeder was more than willing to render extra service. Every one connected with this transaction was very well pleased. To indicate this the association started at once to get enough more box-hive beekeepers interested so as to be able to place another large order for queens. The result was that in a short time they were able to send off a second order, this time for 87 queens. Having given satisfaction with the first order the same queen-breeder was selected to fill the second one. On this second order he used the same care, personally introducing each queen. As a result of these efforts on the part of the county association, great strides have been made toward putting the beekeeping industry of the county on a high level.

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

TODAY, Oct. 11, we have just finished doing what feeding we thought necessary. Generally speaking, the brood-nests were lighter than we anticipated earlier in the season, owing, no doubt, to the failure of buckwheat to yield nectar during the last half of August, on account of unusually cool weather at that period. Brood-rearing always slackens late in August; and with a buckwheat flow later on, much honey is stored where space was formerly occupied with brood. Before the bulk of maturing brood emerged this year the flow stopped, and naturally an empty lot of comb was left in the center of most hives.

FEEDING SUGAR NOT TO BE CONDEMNED.

A few of our leading lights, when referring to the feeding of sugar, frequently infer that such practice is very *shady*. Why this should be the case is a mystery to me, for in actual practice it is sometimes a necessity to feed sugar or let the bees starve. For instance, this season up at our north apiaries the crop from clover was very light and we had few perfect combs of honey to save for feeding later on, even if such an idea had been contemplated. What little white honey was on the hives was extracted at the close of the flow, and we expected from appearances at that time that sufficient stores would be gathered from fall flowers to suffice for winter. But the expected flow failed to materialize; and under such circumstances what should we do? What we did do was to feed enough sugar syrup, even if sugar did cost us $9.40 laid down at the station near our yard, to make us feel sure that every colony was in good condition for winter. An average of 10 pounds of sugar was fed to each colony, some taking more and some less.

At the five yards near home, quite a lot of buckwheat honey was stored, altho the surplus was much less than we expected before extracting, as we found many colonies with full top stories while the super next to the brood-nest was almost empty. Having quite a lot of fine combs sealed over in supers, we saved a lot for feeding—about 600—so as to avoid buying so much sugar. An examination of brood-nests later showed that things were much the same as at our north yards—few colonies quite light, but many in need of 10 or 15 pounds of stores. We have just finished going thru those brood-nests, hunting out the light combs and substituting full combs; and after working in cool weather with *crawling* bees, or in warmer weather with *robbing* bees, we have about decided that one such experience in putting in so many full combs in the fall of year, when the brood-nests are thus more or less disorganized, is about enough. In other words, if a colony is short ten pounds I would rather make up the deficiency with 15 pounds of thick syrup than to tear out three partly filled combs and substitute three full combs of honey. No one denies that honey is the most perfect food for bees when brood-rearing is taken into consideration; but for actual midwinter use I wonder if any beekeeper seriously entertains the idea that sugar syrup is in any way detrimental to the health of the adult bees. Personally I do not want to buy sugar except when really necessary; but at the same time I think there is a lot of nonsense being written as to the hurtful effect of sugar-feeding of bees, granting, as already intimated, that said feeding is confined to winter conditions when little brood-rearing is going on, and is, indeed, not desired.

Our north apiaries have had this deficiency of ten pounds per colony made up by feeding 15 pounds of syrup to each one. Apiaries around home have had on the average three full combs of honey placed in brood-nests after taking out a like number of partly filled combs. No matter what your attitude is on sugar-feeding, I ask any extensive beekeeper in the northern zone, especially outdoor winterers, "Which lot of bees would you prefer to take chances on?" There is no question in my mind as to which would be the best gamble; for, other conditions being equal, and with quite a few years' experience in wintering a lot of bees, we have found that the colony with a center of syrup for cold-weather consumption needs little insurance so far as wintering is concerned.

Sugar cost us about $9.40 on the average, and buckwheat honey was sold for 13 in barrels, and 13½ in tins. At that figure I think the margin was sufficient to have covered all costs of extracting, etc., and the feeding job here at home would have been much more satisfactory, from my viewpoint at least. It is needless to say the 600 combs did not suffice for all the five yards, as a few hundred pounds of sugar was fed in addition to the combs saved out. Most of the latter were for Langstroth hives, while the majority of the jumbo hives were heavy enough without feeding.

* * *

Bees around here are going into winter quarters very strong—too strong, in fact, if we happen to have a very mild January to start brood-rearing and cause stores to be consumed. Many colonies in 10-frame L. hives actually *fill* all the spaces between the combs on frosty mornings even if the bulk of combs are sealed solid. With such a force of bees it is easy to see what might happen with a warm January, as such conditions have existed before to my knowledge, with disastrous results in some cases.

* * *

Honey prices are ruling high, higher, and *highest* ever—at least the highest for our time. Speaking yesterday with a Toronto wholesaler he stated that in a week or two he would be able to supply me with some California honey. Asking what the price would be, he stated that to the trade they would have to ask 20 cts. a pound in 30-pound tins. While we do not expect to buy any of it, yet we are expectantly waiting to sample that from the far West that is going to be handed out at such top-notch prices. The dealer was not sure as to the kind of honey, but said the sample was very fine, and that he could not get another car, so we do not know what to expect—sage, orange, alfalfa, or other brand not familiar to Canadian taste.

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

IF ever any federal-extension bee-worker gets quite seriously ill, so that it looks for a time as tho he might have to give up his work, and all his friends are worried, evidently the quickest road to prompt recovery is a mention of the illness in the Dixie Bee Department of GLEANINGS. It cured Mr. Hawkins, and now it has cured Mr. Bartholomew. May they both stay cured—we need them.

A live, aggressive state beekeepers' association is something to be proud of. There is such a one in North Carolina. It is young, to be sure, but it is no sickly weakling with its guardians wondering if it can survive its second summer. Thriving and energetic, full of vigor and vitality, it is growing steadily. Organized in January of this year, 1917, with about forty members, it had grown by the end of August to a membership of ninety-four, representing about six thousand colonies. That is an average increase of seven new members a month. But it did not grow of itself. Associations seldom do. The larger beekeepers were circularized, not once but many times, and the smaller or less interested ones somewhat less often. And while now there are enough prominent, public-spirited beekeepers to keep up the interest of the association, yet the campaign for new members continues. Early in September, President Sherman selected eleven interested men, advantageously located, as a special committee to put forth a special effort to get new members, because of course there are still hundreds not yet in. He sent each of the eleven a list of those in his neighborhood who might respond to personal solicitation. He sent similar lists to members outside of this special committtee. So he has set the association at work for itself.

The plan of choosing the place for the annual conventions is unique. North Carolina being a long state, one meeting is to be held in the central part, the next in the east, another in the central part, the next in the west, and then the sequence repeated.

Previous to the organization in January, Prof. Sherman writes, "There was no unity, harmony, fellowship, nor acquaintance among the state beekeepers." And the beneficial results of unity, harmony, and fellowship as worked out thru organized effort of any sort are recognized quite beyond the need of argument.

Not only am I indebted to Prof. Franklin Sherman, State Entomologist, and President of the association, for the report of this work, but the beekeepers of North Carolina are likewise indebted to him for his interest and well-directed activity in behalf of the association. In all of this he has had the able co-operation of Mr. C. L. Sams, the Extension Bee Specialist. Harmony again, you see, and united effort.

NOTES FROM THE FAIRS.

There were not many exhibits in the apicultural department of the Tennessee State Fair this year. The crop was so light that most beekeepers were conspicuous by their absence. There were several small exhibits, but Mr. J. M. Buchanan had the only real display. We especially missed seeing the Ring Brothers, from near Franklin. There are four Ring boys, two of whom are beekeepers, while all of them were farming with their father. Two volunteered; the other two were drafted. How our hearts go out with them, and with all our fine, brave lads in khaki!

"Our hearts, our hopes, our prayers, our tears,
Our faith triumphant o'er our fears
Are all with them—are all with them."

(I know Longfellow would not mind the change in the concluding pronoun.)

Mr. Bartholomew was over from Knoxville, attending the fair, and it was good to see him getting around again after being sick so long; but it was not so good to learn why he had no exhibit at the Tennessee State Fair at Nashville, when he was to have one at the Tri-State Fair at Memphis the following week. It was all a difference in the attitude of the fair managements. Nashville had taken no notice of the Extension Department, and offered no hospitality nor encouragement. Memphis, on the other hand, had invited them to come, and placed generous space at their disposal.

I have not seen Mr. Bartholomew since; but he told me that he planned to have in his booth a complete hive, a packing-case, and extracted honey in glass. Each of these three exhibits was to bear a placard, reading, respectively, "Keep bees in this," "Winter them in this," "And you'll get this."

NOTES FROM VIRGINIA.

Following the formation of a state association, county organization has begun in Virginia. Furthermore, *fifty-four beekeepers have agreed to try winter packing this fall.* Good for Virginia, and Mr. Kennith Hawkins, who has recently visited that state!

* * *

Dry fall weather, and getting cold early.

* * *

Packed yet?

* * *

DREAM AND PRAYER

(Written after reading the story of an Armenian refugee.)

Tale after tale I have read,
Till my tortured dreams are dead
How can I dream of a God-like race,
Tender and mighty and full of grace,
  As I used to do,
When day after day I must read
Some unbelievable deed,
Some crushing, incredible thing?
There's reason to weep but no reason to sing
  If dreams are not true.

Pray? With the heart of me dumb?
Hope: Let no empty hopes come!
Shaken and utterly stifled with doubt
Of my race I thought God-like, I wander about
  Thru the wistful air,
Till I pause by the bees, so still,
While the sun on the low near hill
Lays gold on the widowing trees—
And my heart thanks God for the sun and the bees!
  And for dream! And prayer!

FLORIDA SUNSHINE

E. G. Baldwin, Deland, Fla.

SINCE last issue, from several places in the state, east coast and west, has come the cheering news that some honey has been and is being harvested. One man, a novice, reports 200 lbs. from half a dozen colonies, and larger apiarists say there is honey to be had now. But we need to warn beemen against extracting too closely at this time. Under the impetus of high prices and good markets many will be tempted to extract too closely. We know of one man on the east coast who extracted 2500 lbs., and will have to give it all back to the bees again! Bees need forty or fifty pounds of honey in hives at this time of year to carry them over surely to honey next spring again. Do not be governed by the northern reports of 30 lbs. per colony. That must be almost doubled for safety in Florida. Safety first, honey second.

AVERAGING HONEY PRICES.

The latest Government bulletin, No. 7, sent out by the federal authorities from Washington, quotes from nearly a dozen honey markets of the land; and it is interesting to note the prices. We averaged these prices for amber and light extracted honey, all quotations, and find that it is 13¼ cents per lb. for extracted honey. Think of that! The average price, for all parts of our land, north and south, east and west, is over 13 cents per lb., wholesale, for all good grades of extracted honeys! To think that we should live to see the day when extracted honey would bring as much as butter used to sell for, and more than beef used to bring! We hope that Florida beemen will keep posted, and send postals to Washington for copies regularly sent out, of the Monthly Crop Report, issued by the authority of the Secretary of Agriculture, Washington, D. C. Get your name in, and the reports will be mailed you regularly. Keep posted. That is the secret of success—one of them at least.

On p. 88 of the Monthly Crop Report referred to above, we note that Florida's estimated average crop of honey up to September 1, this year, is put at 58 lbs. per colony, spring count. We do not see how this can be possible, and fear that some old or erroneous reports or estimates must have been received or used. So far as we have been able to learn, for the bulk of Florida the average amount of honey per colony will fall far below this. Only in favored localities has there been any surplus to date, (October), and that was mostly gathered after Sept. 1. Only a few reports come in to the Government authorities from Florida; and an average, based on the few favored localities, will always be misleading. Federal authorities complain that they can not get a good, representative, average report from our state.

HONEY PRICES.

Beemen of Florida, remember that honey is now a scarce article, and prices are governed accordingly. Perhaps fewer apiarists of Florida take bee journals than further north. It is natural, because much of what is written for the periodicals applies mostly or only to conditions in the northern states. As a result, many beemen, even of good standing and wide experience in Florida, think it of little use to subscribe to the northern papers, just as most truck gardeners of Florida are helped not at all by the northern papers in the general rules for growing truck. Consequently, many beemen in our state do not keep abreast of the current conditions and prices, and so are prone to take the first price offered even when less than the real value. As a result, they are a prey to jobbers and speculators, and the South has always been considered a fair field for exploitation by honey-sharpers and cheap-price seekers. We are inclined to think that the usual quotation readings, such as "Cuban and southern honey," etc., that usually make a distinction in name, no matter what the grade or quality, no matter how good the honey from the South, is partly due to the effort of bidders and buyers to keep the South a field for cheap honey-buying but not necessarily for buying of *cheap* honey. We protest against the distinction that classes Cuban with Southern, especially with Florida honeys. The good honeys of Florida are as good as the best; the poor honeys of our state are as poor as the poorest. Good palmetto, tupelo, orange, and pennyroyal honeys are not to be surpassed by the finest alfalfa, sweet clover, basswood, or sage. Perhaps white clover only can surpass them, and even that does not always.

So again we say, beemen of Florida, remember to ask a good price for your product. While the quantity is slight this year, there is all the more reason why you should ask a stiff price for what you may have. All other commodities are higher in price; and as you must pay your toll of increased and increasing rates and prices for all you buy, you owe it to yourselves and your families to ask all your own product is worth.

JUST NEWS

Editors

JOHN C. Bull, secretary-treasurer of the National Beekeepers' Association, has scheduled the following dates for the state associations' annual conventions: Illinois, Nov. 14-15, at Springfield; Ohio, Nov. 23-24, at Lima; Indiana, Nov. 26-27, at Indianapolis; Michigan, Nov. 27-28, at Saginaw; Chicago and Northwestern, Nov. 30 and Dec.1, at Chicago; Minnesota, Dec. 4-5; Iowa, Dec. 4-5; and Wisconsin, Dec. 6-7. The wisdom of the course adopted by the National Secretary is apparent because of the fact that by arranging the state meetings so that there shall be no conflict of dates, speakers of national reputation can make the entire circuit and be present at all of these state association meetings. This is good headwork and common sense.

* * *

The exportation of queens from the United States to Australia appears to be attended with more and more risk and dissatisfaction. In a recent issue of the New Zealand *Beekeepers' Journal* an article appears under the heading, "Queens," the first paragraph of which reads as follows: "Mr. Hopkins blames the grafting method for the loss of queens imported from America. May not the loss be caused by the mail-bags being bumped about more nowadays thru the quicker service, or thru the mail-bags being fumigated, or thru the queens being put into the ordinary canvas mail-bags instead of specially ventilated mail-bags as they used to be?"

* * *

The program of the 28th annual meeting of the Illinois State Beekeepers' Association, to be held in the sun parlor of the Leland Hotel, Nov. 14 and 15, 1917, and the night meeting of the 14th in the Leland banquet hall, is as follows: Call to order at 10 a. m. by Pres. Baxter, of Nauvoo; invocation, Rev. C. Warber, of Alhambra; address of welcome; response and president's address, by the president; reception of members; issuing of badges; recess until noon hour to visit and get acquainted. Afternoon session.—Report of A. L. Kildow, State Inspector of Apiaries; "Better Beekeeping," by Hon. N. E. France, of Platteville, Wis.; Question box—(in order all the time). Night session. — "Beekeeping — North and South," (illustrated) by Frank C. Pellett, of Atlantic, Ia. Second day—Morning—"Space between Frames" and discussion — led by C. P. Dadant; Election of Officers for 1918; group photograph taken to go in the 1917 report; judging the exhibits by ballot by non-exhibitors. Afternoon session.—Prize essays, $5.00, $4.00, $3.00, $2.00, $1.00. Awards will be given on 150 lbs. of comb honey, and 150 lbs. of extracted honey. Handsome certificates will be issued to the winners of these awards; and upon winning either of them the third time, a valuable gold medal will be given the winner. (Explained further at meeting). Miss Stewart, of Chicago, will again report the meeting. Meeting is for women as well as men. Headquarters at Leland Hotel, where rates are $1.25 and up, European plan. It is expected that Editor E. R. Root, of Medina, O., and Dr. E. F. Phillips, of Washington, D. C., will also be present. Jas. A. Stone is the efficient secretary of the Association and in charge of the program. His address is Springfield, Ill., Route 4.

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What we in this country may come to in the use of sugar is possibly foretold by the action of the English Ministry of Food Control now in charge of the consumption of sugar in England. There a local food office is established in every community. No sugar can be sold at retail to customers except by retailers registered by the local food-control committee; every household is entitled to obtain from the local food office a sugar-registration card, to cover all members of the household not in receipt of government rations. A portion of this card is deposited by the householder with the registered retailer selected by him. The retailer must accept sugar cards tendered to him; the retailer is required to give preference to registered customers who have deposited their cards with him; caterers and restaurants of all kinds will have their supply regulated according to the number of meals they ordinarily serve; manufacturers will have their supplies of sugar regulated in accordance with strict restrictions imposed upon their use of sugar; registered retailers will have their supplies of sugar regulated in accordance with the number of their registered customers; sugar can be obtained by caterers, manufacturers, and registered retailers only on surrender of vouchers issued by the local food office; wholesalers will have their supplies of sugar regulated in accordance with the quantity which registered retailers, caterers, institutions, and manufacturers or other wholesalers are authorized to obtain from them. Severe penalties will be imposed for false statements and other offenses under the plan.

* * *

The executive committee of the Ontario Beekeepers' Association has arranged to hold its annual convention at Hotel Carls-Rite, Toronto, on Tuesday, Wednesday, and Thursday, Dec. 11, 12, and 13, 1917. The following subjects and speakers have been arranged for:—Mr. B. F. Kindig, State Apiary Inspector of Michigan, has consented to be present and speak of " Some Mistakes in Management in the Bee-Yard " and of " Retailing the Honey Crop." Subjects discussed by Ontario members will be " Simple Methods of Rearing and Introducing Queens " by Jno. Newton, of Thamesford; "Mysterious Losses of Adult Bees" by James Armstrong, of Selkirk; Wm. Couse, of Streetsville, and W. A. Chrysler, Chatham; " Out-apiaries " by E. T. Bainard, of Lambeth; " The Farmer Beekeeper," by W. W. Webster, Little Britain; " Apiary Locations " by H. G. Sibbald, of Toronto; " Wintering " by J. L. Byer, of Markham; and " Beekeeping Appliances " by W. J. Craig, of Brantford. There will also be question - drawers and general discussions. On one of the convention evenings the members will have dinner together at Hotel Carls-Rite, so that the social side of the convention may not be overlooked. This is the annual gathering of the beekeepers of Ontario. All are cordially invited, including those from across the line who can make it convenient to attend. Morley Pettit, Guelph, Ont., is secretary-treasurer.

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At the Minnesota State Fair held this year, September 3-8, Mr. John Jager was superintendent of the Department of Bee Culture for this big fair, and sent out a letter to the beekeepers of Minnesota urging them to make the most of their opportunity to advance beekeeping interests at this state show. The letter is so full of the spirit that should animate officers of all beekeepers' associations that we reprint it here in the hope that it will help to inspire the whole beekeeping fraternity:

St. Paul, Minn., Aug. 3, 1917.

Greetings, Brother Beekeeper:—Our country demands food. Honey is perfect food. The National Food Training Camps are planned as a great campaign in connection with the state fairs to teach the production and conservation of foods. The Minnesota State Fair, Sept. 3 to 8, will be a great food training camp in the voluntary service of the government. Now is our time as beekeepers to make a representative showing of honey and the beekeeping methods of our state. Every beekeeper, large or small, should be represented. Honey production should show its maximum importance along with other food products. We have reclassified Minnesota into three sections—the region of the woods, the prairie lands, and northern Minnesota. Each section has its own premium classification. This will make a fair and equitable distribution of prizes. Every beekeeper can participate in the coming exhibition, knowing that he will be given a fair and equal chance. I am enclosing our 1917 premium list. I want you to read it over—every word. Then I want you to make it a personal matter to be represented at the coming fair. Help make our exhibit of the bee industry the biggest, best, most bountiful yet held. Let us show to the world Minnesota honey as a food product. Co-operation must be our watchword if we are going to progress in beekeeping. We must work together, and the Minnesota State Fair offers a good opportunity to exhibit, to talk, to boost, to demonstrate honey as food. I am counting on your exhibit, brother beekeeper.

Yours for beekeeping,

John Jager.

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The recent organization of the beekeepers of Virginia is already bearing good fruit. The Brunswick County Beekeepers' Association, organized at Lawrenceville, Va., on Sept. 29, is one result of the state organization. This new association results from the efforts of County Agent J. B. Lewis, with the assistance given him by State Entomologist W. J. Schoene and Kennith Hawkins, of the United States Department of Agriculture, who have been doing some excellent extension work in Virginia the past summer. The officers of the new association are: J. T. Holloway, president; W. D. Kates, vice-president; Dr. Richard Manson, secretary and treasurer. There is a decidedly enlarged interest being developed in beekeeping in Virginia as the result of the extension work and the good it has accomplished there. Prof. Schoene, secretary of the state association, is a very enthusiastic worker, and expects to see half a dozen more counties organized as a result of continued extension work in beekeeping.

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The Sioux City, Ia., *Daily Tribune* of recent date says: " The town council of Buck Grove, Ia., has ordered Dr. A. F. Bonney to remove his herd of thorobred bees outside of the corporation, holding that the said animals (or insects) are a public nuisance. Dr. Bonney has called in the services of an attorney and will resist the officers." The *Tribune* adds: " Really, it is all very complex; but were it not for Dr. Bonney not many people would know of Buck Grove, Ia."

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A letter received from J. U. B. McComack, of Gayle, Jamaica, B. W. I., on Oct. 1, says that a terrific storm visited Jamaica on Sept. 23, lasting half a day, and caused very great damage to the crops and destroyed much of the winter pasturage for bees. Mr. McComack says that in his locality the wind blew so low and swift that it took off the covers of many hives and blew many off their stands, the driving rain also killing many bees. He adds that very many beekeepers will likely have to do heavy feeding to keep their bees alive and in good shape for spring.

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The New Jersey Beekeepers' Association, believing that considerable benefit to the bee industry might be secured by presenting the industry practically to the people attending the New Jersey State Fair at Trenton, on Sept. 24-28, rolled up its sleeves, and by much hard work and some self-sacrifice put up a very instructive and interesting exhibit. Several observation hives, including queens, were shown, as was also an old box-hive abomination. Modern frame hives and all the appliances of up-to-date beekeeping were displayed. Foul brood and the results of wax-worms were shown and explained to hundreds of inquirers. But a colony of live bees which had built a nest of combs on the limb of a tree attracted great attention. C. H. Root brought this by hand from one of his yards near Red Bank. The exhibit was in charge of E. G. Carr, State Bee Inspector. No little credit is due Mr. Carr and President Barclay for considerable hard work in making the experiment a success. Various members of the association assisted on different days. A large amount of honey was sold under an association label. A curious fact was the small demand for comb honey. The association is aiming to become more closely affiliated with the State Agricultural Department, and will hold its annual winter meeting at the same time as does the State Department, in January, at Trenton.

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The Minnesota Beekeepers' Association holds its annual meeting December 4 and 5, at Minneapolis. An exceptionally good meeting is expected, with many Minnesota beekeepers and outsiders taking prominent parts on the program. The editor of Gleanings will be present. The program is in the final process of preparation and will be printed for distribution before Nov. 1. Every Minnesota beekeeper should plan to attend, and stay the two following days for the last two days of the 1917 session of the Minnesota Horticultural Society. Send to the Secretary, L. V. France, University Farm, St. Paul, Minn., for a program, if you do not receive one by Nov. 10.

M. B. Talley, bee inspector for Victoria County, Tex., writes under date of Sept. 30 that he had just lost everything except his bees and carpenter tools by fire. He adds that his part of Texas is still very dry and the bees doing little; that some have a very good supply of stores, and others are on the point of starvation. Mr. Talley does not state whether his unfortunate fire was the result of the extreme drouth and dryness or otherwise.

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The annual meeting of the Western New York Honey Producers' Association will be held at the Genesee Hotel, Buffalo, N. Y., on Tuesday and Wednesday, Nov. 13 and 14, 1917. All beekeepers are welcome and invited to be present. An interesting program has been prepared as follows: Tuesday, 10:30 A. M.—Call to order by president; secretary-treasurer's reports; "Wax-rendering," O. L. Hershiser, of Kenmore. 1 P. M. — Appointment of committees. "Beekeeping as a Business," J. L. Byer, of Markham, Ont.; "Producing Fancy Comb Honey," S. D. House, of Camillus; discussion; "Did it Pay to Recommend a Minimum Selling Price for the 1917 Honey Crop." Wednesday, 10:30 A. M.—"Rearing Good Queens," Chas. Stewart, of Johnstown; "Which Shall We Do—Keep More Bees, Keep Better Bees, or Keep Bees Better?" E. R. Root, Medina, O.; discussions and questions. 1 P. M. Election of officers; reports of committees, new business; "Preparing for a Crop of Honey," J. L. Byer; "Bee Diseases," by State Inspector; question-box; adjournment. William F. Vollmer, of Akron, N. Y., is secretary of this association.

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Honey is not included in the list of commodities falling within the classification of government - license - controlled exports. Honey may be shipped abroad as freely now as before the war exports law was passed on June 15 last.

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The M. C. Silsbee Co., whose bee-supply manufactory at Haskinville, N. Y., was burned out Sept. 1, has started a new plant at Avoca, N. Y.

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Prof. E. R. King, Cornell University, now enlisted in the United States aviation service writes that only one man connected with the college has been exempted from the draft on industrial grounds, and he is the acting farm superintendent. The war has taken several professors and instructors and many assistants, and no courses in apiculture will be given, but the apiary will be maintained and be run for honey.

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DEATH OF O. O. POPPLETON.

Just as we go to press we are informed of the death of another old pioneer, Mr. O. O. Poppleton, which occurred Oct. 4 at the Soldiers' National Sanitarium. Hot Springs, South Dakota. Mr. Poppleton was one of the last of the old veterans who helped to put beekeeping on a commercial basis in the early 60's and 70's.

He enlisted as a private in 1861 in the Civil War. He was rapidly promoted until he was made regimental adjutant. He served his country faithfully for five years; and altho he received no scar, yet he was in many of the important battles. He was taken prisoner once, but was later exchanged. He began beekeeping shortly after the war in a small way and continued till he had some 150 colonies in Iowa. This was along in the 70's.

He was one of the early advocates of winter packing outdoors, when every one else was wintering indoors. He is also said to have invented the solar wax-extractor, or at least he was one of the early users of the principle of melting beeswax by means of the sun's heat.

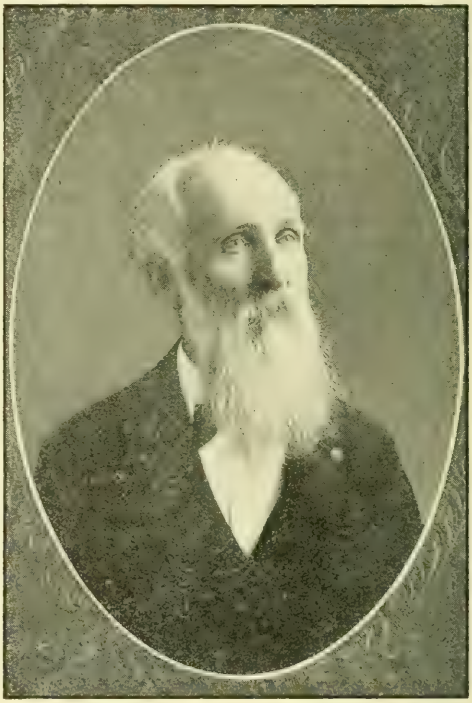
He was one of the first to see the merits of the Long Idea hive that has been exploited in these columns at various times. It mattered not to him whether he was following orthodoxy so long as he could get results.

When he went to Florida he started out in beekeeping anew with the same hive. Notwithstanding he was advanced in years his business increased until he was the largest successful migratory beekeeper in the world. Others have moved whole apiaries of bees from time to time to catch new pastures; but ultimately they gave it up, either because it did not pay or because they lost interest. But Mr. Poppleton practiced migratory beekeeping among the Florida keys for ten or fifteen years. The Long Idea hive which he had adopted he claimed was peculiarly adapted to moving about. It was never top-heavy in moving, and would never be blown over by high winds when put down in place.

He moved his apiaries on a gasoline-launch up and down the famous Indian River. He would breed the bees in one locality; then, when of the proper honey-gathering strength, he would move them to palmetto and mangrove districts.

In the early days he was a voluminous writer for the bee journals; and so far as we know his copy was always accepted, for no reader could help knowing that he was an authority. The fact that his early opinions are in exact harmony with later-day practices is convincing proof of his knowledge of the business at a time when there were so many heresies afloat.

Mr. Poppleton was of spare figure, hardly up to the medium in height, and a man who was an invalid much of the time; but the fact that he managed so many bees on the migratory plan speaks volumes for the man and for the hive that he used. He made it very plain that it would have been impossible for him to handle the ordinary hives on the tiering-up principle because he could not lift heavy supers; and the Long Idea hive had nothing heavier than a cover or a brood-frame to lift. When he came to move the bees he hired cheap colored help to put the hives on the boat and take them off again at the destination. In view of the fact that the merits of the long single-story brood-nests, capable of holding 25 or 30 frames, are beginning to create some interest of late it is regrettable that the chief advocate of the hive and system should have passed away at this time.



THE LATE O. O. POPPLETON.

OUR HOMES

A. I. ROOT

My yoke is easy, and my burden is light.—MATT. 11:29.

In all thy ways acknowledge him, and he shall direct thy paths.—PROV. 3:6.

I will both lay me down in peace, and sleep; for thou, Lord, only makest me dwell in safety.—PS. 4:8.

If any man will sue thee at the law, and take away thy coat, let him have thy cloak also.—MATT. 5:40.

EVER since I heard that talk by Dr. Barker about worry and over-anxiety I have tried to avoid being upset by any provocation in business that might occur. Dr. Barker, in fact, almost burned into the ears of his audience the importance of putting unpleasant thoughts out of our mind by the force of will, and dwelling only on the bright side of whatever disaster may occur.

In a recent transaction, on account of my deafness partly, and partly because I neglected to do business in a businesslike way, I was robbed, or perhaps I should say it looked so to me, of something like a hundred dollars; and, no matter how many times I tried to put it out of my mind, and to think of something else, it kept coming back. I kept planning how I could protect myself and get the wrong righted. In fact, I lay awake nights brooding over it. Of course, I kept praying over it, and pleading the gracious promises in God's holy word. But in a little while back I was again, floundering in the "slough of despond." In the Christian's Secret of a Happy Life, the author, Mrs. Smith, speaks about a man who was walking along the road with a heavy sack of grain on his shoulder. A neighbor with a wagon overtook him, and asked him to get in and ride; but the poor stupid fellow, instead of dumping his bag of grain in the back end of the empty wagon, *kept it on his shoulder.* When his neighbor remonstrated the man replied:

"Why, it seems too much to ask you to carry both me and my burden. I can easily keep it on my shoulder if you will just give *me* the ride."

Now, I was like that poor foolish man. After I had brought my burden and dropped it at the feet of the dear Savior, I kept continually throwing it on to my poor weak shoulders again, and in that way I spoiled my peace of mind. Finally, once in the night time, when I could not sleep, I prayed again for deliverance. You see I had been planning over and over the right thing to do, and it was not very clear what course *I* should take in the matter, when all at once shone out in the darkness the beautiful text, "In all thy ways acknowledge *him* and *he* shall direct thy paths." It seemed just as if the Holy Spirit spoke out, rebuking me and cheering me with the comforting thought that, if I would only acknowledge him in all my ways—in other words, keep a clear conscience—*he* would direct my paths and keep me from stumbling. Oh blessed promise! Is it really true that the great heavenly Father will take us by the hand, or perhaps, *in a crisis,* put his hand on our shoulder, and guide or lead us in the pathway a Christian should follow?

It is now two days since the above was dictated, and I was most happily surprised to find in the morning mail the following from the head of the great establishment:

> *Dear Mr. Root:*—Yours of yesterday is received, and in reply to the same we beg to advise you that we have referred your letters to our agent, with instructions to get in touch with you as soon as possible, and get the matter straightened out to your entire satisfaction.

You see, in my brooding over the matter I had got into my head the old saying that "corporations have no souls," etc. But here I have it, right from the head of the institution, that the whole jumbled-up matter should be "straightened out to my entire satisfaction." Dear reader, if you have had similar temptations, if you have at times been tempted to lose not only faith in your fellow-men, but faith in God as your heavenly Father, and if you have been tempted at times to think that it is "preposterous" to expect *him* to bother with petitions of a poor humble individual like yourself, then take courage from the little lesson I have given. Yes, I feel ashamed of my lack of faith, and I feel ashamed to think of the time I studied and worried as to how it was best to do and yet all the time I had the promise that "*he* would direct my paths."

After Dr. Barker's talk that I told you about, I was told he was to give *another* talk on *health,* or how to live to be a hundred years old. He did not give that talk here in Medina; but my youngest daughter informed me he was to give it in the city of Barberton, some 25 miles from here; but when it was just time for us to start with the automobile my oldest grandson, who was to accompany us, was suddenly taken ill. It was too late then to make other arrangements.

The next night the doctor was to give the same talk in Massillon, some 40 miles from Medina. Just as we were ready to start, a thunderstorm came up, and I decided to go by train. The train would reach destination in *time* provided it were "on time." When we were near Massillon two freight cars ran off the track and thus blockaded the road. Of course, I did not know what the trouble was, and was inclined to chafe and fret and scold about the railroad companies being "always behind," etc. But I remembered Dr. Barker's vehement injunction to take things cool, look pleasant, and beware of finding fault. I told the conductor and his assistant how anxious I was to hear Dr. Barker, and then they explained the condition of things. They said they had to walk a mile and a half to reach a telephone. But things were very soon righted, altho the train came in an hour late. A stranger informed me that I could reach the Chautauqua tent by a walk of about six minutes, and then I started off. Now, Massillon is a very pretty town. In fact, it is almost a forest of shade-trees. These trees, while very grateful on a hot day, obstruct the electric lights, especially during a cloudy rainy night. I inquired the way several times, and rushed ahead in the darkness. An elderly lady overheard my inquiry, and suggested that, as some of the walks were in a bad condition, I would have to be a little careful. When I told her I was exceedingly anxious to hear as much as possible of Dr. Barker's talk, she said there was great danger of my getting but very little of it, and suggested that she would go out of her way until I could get sight of the Chautauqua tent; and when we came to a bad piece in the walk where there was little or no light, she kindly touched my arm and directed my course. When I told her who I was she said:

"Oh dear me! Is this Mr. A. I. Root? Years ago I took Gleanings and had your A B C book; and it is a great delight to me to meet you and give you a little help in a time like this."

Do you see, friends, where our text comes in—"He shall direct thy paths"? She was a lady of culture and intelligence; and God's method of directing the footsteps of a poor unfortunate is often thru the medium of kindly, neighborly people.

Dr. Barker's talk lasted an hour and ten minutes. I crowded right up in front and managed to hear just about the last ten minutes. He gave it while going thru his gymnastics on a sort of cot placed before the audience. At the close of his talk he asked the audience to come up, one and all, and ask him questions. He said he was glad to direct to the best of his ability any who needed advice he could give. A great crowd clustered around him. As a matter of courtesy the men stood back and let the women folks come first. I waited as long as I felt I could stand it, for I dislike to interrupt the women, but finally I managed to push up and say:

"Doctor, I am A. I. Root. I have just managed to get in to hear the closing part of your talk."

"Why, bless your heart, Mr. Root, I am exceedingly glad to see you."

Then he turned to the crowd and said:

"I wonder if you people all know who this man is that I have by the hand."

Somebody replied, "It is the greatest beekeeper in the state of Ohio."

Another woman in the crowd caught her up and said:

"*Ohio!* Why, he is the greatest authority on bees and bee culture in the *whole wide world.*"

At this point I protested, saying, "No, no, friends. Don't give me more credit than I deserve. Years ago I was something of an authority; but just now the credit belongs to my sons and sons-in-law. But I want to ask the good doctor a question. Is it not possible that brisk exercise in our 'war gardens' so as to get into a profuse perspiration out in the sunshine once a day or more will answer the purpose of the gymnastics?"

The doctor replied:

"Yes, Mr. Root, it will answer perfectly if you get into a good sweat out in the open air once every day of your life. But what are you going to do when it comes winter?"

On the impulse of the moment I called out so everybody present could hear it distinctly, "Go down to Florida."

This provoked a big laugh, and so many of the crowd gathered around me to ask questions that attention was diverted from the good doctor to myself; and as he was rather tired I do not know but he was glad of it.

The longer I live, dear friends, the more I am convinced that a greater part of the troubles with our health, and I might add happiness too, comes from lack of exercise out in the open air that God intended we should enjoy like the animals; and had time permitted I should have included in my reply that we should wear just as little clothing as possible while taking this open-air exercise, especially during hot weather. In working in the garden it is like being fettered for me to wear a starched shirt and collar, or any sort of shirt at all. In fact, when we have severely warm weather both here and in Florida, I work in the garden without any shirt—just pants and vest and underwear; and I want the underwear so the sun and air can get around my throat and lungs as much as possible. The trouble is, there comes a rush call for me over to the factory. Sometimes my coat is left where I cannot find it quickly; and Mrs. Root and my grown-up daughters protest against my going to the office and dictating to our nicely dressed stenographers while in my "garden rig." In fact, one of the "women folks" suggested I *might* be arrested and *put in jail* because I went around among respectable people only half dressed, or almost not dressed at all. Then I urged that we men have as good a right to go around with bare neck and shoulders as the women folks that are right up-to-date in fashion. Furthermore, I suggested something like this: "I would very much rather be in jail full of *life* than to be in the cemetery 'gone dead.'"

As I started away from the tent to find a hotel, a gentleman and lady said, "Mr. Root, you cannot get to a hotel handy without going over some very bad walks and pavements. We will walk along with you, and have a little chat."* On the way I was informed that they too had once kept bees and read Gleanings. Before leaving them I was introduced to a son-in-law and his wife; and the son-in-law made a remark before I left, saying that, altho he was not a beekeeper, he knew something about A. I. Root and his manner of doing business. Years ago he was setting up an ensilage-cutter near our place. By some mishap a hole had to be drilled in a very difficult part of the machine. He did not succeed in getting around until after the work was stopped for the day; but without expecting it he said we started up the engine, drilled the hole, got him out of his trouble, and charged him only—what do you think? He said we refused to make any charge at all, saying we did it just for accommodation and to help a man out of a tight place. Here again was the fulfillment of the promise, "he shall direct thy paths."

Now, altho these troubles were a disappointment to me in many ways it turned out to be one of the pleasantest trips I ever made. I became more intimately acquainted with the railroad men than I ever had been before. I also met a very nice lot of people, and was enabled to offer quite a few suggestions as the result of my experience; and I began wondering if we old men do not sometimes make a mistake in thinking we have got to be only a "back number," and that nobody cares to be bothered with anything we can say or do. When I got off the train, both the conductor and his assistant shook hands and hoped they could serve me better the next time opportunity offered.

I close this Home paper, dear reader, with the wish that one little text, "In all thy ways acknowledge him, and he shall direct thy paths," will prove to be as much of a beacon-light to your footsteps as it has been to mine.

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* As the kind gentleman placed his hand on my shoulder while we passed under the dense shade-tree, I thought again of that wonderful promise, "He shall direct thy paths." As he bade me good-night and assured me it had been a pleasure to be of some little assistance he said, "You tell the people at the hotel that *Mr. Harrison* sent you there."

Just one more thing that I came pretty near forgetting. After the big laugh at my advice about going down to Florida, Dr. Barker said he was in hearty accord with my plan of "gymnastics," and that starting perspiration one or more times every day, out in the open air, would be a splendid *help* toward living to be *a hundred years old*.

Ask, and it shall be given you; seek, and ye shall find; knock, and it shall be opened unto you; for every one that asketh receiveth; and he that seeketh findeth; and to him that knocketh it shall be opened.—Matt. 7:7,8.

"HARNESSING" THE WIND.

Praise God, from whom all blessings—"*blow*."

Gleanings was the first magazine, and perhaps the first periodical, to announce to the world the advent of a machine that would fly with wings up in the air, and come back to its starting-place. In other words, Gleanings first announced to the world that the navigation of the ethereal blue was possible. Well, it is our great pleasure to tell you today that man has succeeded in traveling over the surface of the earth with almost incredible speed without the aid of any gasoline, gas, or coal. Yes, I know it has been done before, after a fashion. Several years ago, when visiting friend F. A. Salisbury, in Syracuse, N. Y., he took me around in his electric automobile, and told me that it was moved by power obtained from Niagara Falls, about 150 miles away. This was a great achievement, I grant you: and if every one of the dear readers of this journal had a cataract like that of Niagara Falls in *his back yard* or *garden*, it could be compared to what I am going to tell you, for the winds—yes, even the light breezes that blow almost every day over our heads—have finally been "harnessed up," as I told you on page 811 of our issue for September, to do our bidding.

Let us go back a little. Several weeks ago somebody asked in the Question Department of the *Scientific American* if windmills had ever been made to furnish current for an electric lighting-outfit. The editor replied that it had been done several years ago, and referred the querist to their journal for September 16, 1912. I at once sent for that issue, and read over and over the article entitled " Farm Electric Lighting by Wind Power. A complete lighting plant installed for $250." It was not until I read it a second and third time, however, that I noticed what I have put in italics in the following from the *Scientific American*:

> *The economy* of such a piece of apparatus will be understood when I state that, besides running the electric dynamo for which it was primarily installed, it takes its turn at operating a drill-press, grindstone, corn-sheller, *beehive-saw,* washing-machine, grain-elevator, and a feed-grinder.

I read it aloud, and announced to the younger Roots gathered about me that if this man had a " beehive-saw " he certainly was or had been a beekeeper; and wherever in my travels I find a man who has ever taken and read Gleanings or the A B C book, I almost invariably find him and his place to be an "open sesame," at least to your humble servant. So I promptly forwarded him a letter, and below is his answer to it:

> THE ELECTRIC FARM
> UTILIZES THE WIND FOR ELECTRIC LIGHT AND POWER
> J. F. FORREST, PROPRIETOR.
>
> *Dear Friend:*—I feel that I am quite well acquainted with you, as I was a subscriber of Gleanings in Bee Culture for a short time, and also have your A B C of Bee Culture. We have had some supplies from you. This was quite a number of years ago. I still keep bees, but they are sadly neglected.
>
> I am still at work on my electrical outfit, and I shall be delighted to have you come and look things over. It is much better to see things in operation, and be prepared to spend a day or two, so we can go over every part in detail. I enclose you a clipping.
>
> We live two miles south of Poynette, 25 miles north of Madison, and 12 miles south of Portage, on the Madison and Portage division of the C., M. & St. Paul R. R. If you can let us know what train you will be on we will meet you at the depot. I am sure we shall enjoy your visit very much, and I believe you will consider the time well spent.
>
> Poynette, Wis., Sept. 23. J. F. Forrest.

With the above letter he inclosed a clipping from the *Iowa Homestead;* and this clipping, after enumerating the different uses that Mr. Forrest makes of the electricity generated by wind power, reads as follows:

> None is more useful or unique than the duty of charging the Forrest family automobile, enabling the owner to run the car an average of about twenty-three miles without recharging.

It was the part about the automobile that started me off in such a hurry.

Well, this morning, September 28, I have just returned from a visit to Poynette, Wis.; and I can say, as did the queen of Sheba, " Behold, the half was not told me." First, there was an electric automobile that would hold comfortably four or five persons. Second, it climbed with three people up about the highest and steepest hills in Wisconsin. Third, the morning on which I made the trip was after quite a little rain the night before, and the roads were more or less slippery. Fourth, and most wonderful of all, *Mrs. Forrest* ran the machine while her husband and I looked on. Mr. Forrest explained by saying that she ran it rather more than he did, and he thought that perhaps she did it a little more successfully than he did. Now, Mrs. Forrest is just a plain farmer's wife—that is, to all appearances; but when you come to know her better I am sure you would be reminded of what friend Collingwood said on page 725, September; and you might think of what *I* said too, in that Home paper some time ago where I had for my text, " Her price is far above rubies." While I was in their pretty and comfortable home looking over various inventions for making electricity help the busy mother, his sister brought me something that convinced me that genius seemed to run in that whole family away off on those Wisconsin hills, for *she* was not only skillful in the home, skillful in running an electric automobile over slippery roads and up long steep hills but she was also a poet and *artist* of wonderful and ingenious skill. Read the poem at the end of this Home paper and see if you do not agree with me.

Now listen while I try to tell you what friend Forrest has done in the way of harnessing the wind. Perhaps you have already gathered that his locality on one of the tallest hills, perhaps, in Wisconsin, is unusually favorable for wind power. His first windmill was only 12 feet in diameter, and only a little higher up than the roof of his barn; and this 12-foot mill successfully charged the batteries of a forty-cell storage battery, altho I believe he had to charge 24 cells at a time. Of course, 23 miles is not a very big run for an electric automobile; but when you take into account the Wisconsin hills, some of them pretty rough and gravelly at that, you may think it is a pretty big feat after all.* Mrs. Forrest said she had already made 23 miles on one charge, and the batteries would probably have held out for quite a number of miles more, especially on level ground. It is not advisable to exhaust the batteries down to the last half-mile; and it is important, also, when you start to charge it, to see that it is filled *clear up*. Friend Forrest is a crank on storage batteries as well as on windmills, and he and I had some very interesting experiences to relate, as you may guess, in regard to storage batteries.

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* To get back to that home, away up on the hills, of course takes quite a little "juice," and this "home stretch" must be taken into consideration on every trip.

In the home they have a suction vacuum carpet-cleaner, an electric toaster, warming-apparatus, electric fans, various kinds of lamps; and a young son, who is a veritable "chip off the old block," until very recently had a pretty wireless outfit; but "Uncle Samuel" suggested (?) that he take it down.

When I first got up by the barn I found they were busy preparing to put up a silo to hold their big crop of corn. As the location is a natural gravel hill, in order to save going up so high they had dug down perhaps twelve or fifteen feet. A carrier, such as is used for moving manure from stables, was let down into this pit, and I should say nearly half a wagonload of stones and gravel was shoveled into it. When I saw the rope hitched on to such a heavy load I said, "Why, friend Forrest, you do not expect that storage battery to handle all of those awful big stones, do you?"

"I think it will handle it. We will see."

He "pressed the button," and up mounted the cargo of sand, gravel, and stones, and off it shot to a wagon a little distance away, dumped itself, and then came back to the starting-place, all the work of the sixteen-foot windmill.

There are machines galore all over his buildings, ready to start up in an instant at any time, day or night. There is quite a nice engine-lathe, feed-grinders, corn-sheller, grain-elevator, churn, washing-machine, emery wheel, sheep-shearing machine, a buzz-saw to cut firewood which will cut off logs, I think, six or eight inches thru, even of hard oak. In fact, I saw different machines for different purposes all ready harnessed up for instant use all around the various buildings and even outdoors.

After we had sufficiently discussed machinery we were ready to look at something else for a change, and so I looked over his beautiful farm—eight acres of beans, for instance. But the beans up on that hillside had been injured more or less by frost two weeks before then. Sweet clover grew on both sides of the road as high as one could reach; but the people around there somehow have as yet not gotten hold of it. A beautiful clean strawberry-bed had luscious berries (of the fall-bearing kind) just as full of green fruit as could be, and some of it just ripening. A plum-orchard near by was a delight to me in more ways than one. They were just at their very best. There were so many plums on the ground I could hardly find a place to set my foot, and many busy hands were gathering up the fruit. Mrs. Forrest said they got only $1.00 a bushel in Poynette; but she carried some of them (I suppose in that beautiful electric auto) to a larger town, some distance away, and obtained $2.50 a bushel for them instead of only $1.00. These plums I should pronounce some of the best selection from the native wild stock; and the great beauty of this variety is that they *never winter-kill,* and are never hurt by the frost. The trees are loaded down more or less every season, and never a failure. I think there must be toward half an acre in the orchard, and more luscious plums on the trees and on the ground than I ever saw before. Some way I had got it into my head that plums did not agree with me; but I ate so many just before dinner that I really felt worried about the consequences and yet they did not hurt me a bit, and I never felt better in my life. Perhaps the native wild plums would not do as well everywhere else as they do on those great Wisconsin hills.

Now a word about windmill power and storage batteries. The objection has always been to wind power, as you know, that it is very irregular; but when you once get this irregular force bottled up in a storage battery, then you have the most efficient and steady power in the world. In my boyhood days I had visions of having a windmill pump water into a great elevated tank, and then use the water to run little water motors with power; but such a tank (aside from the expense) would never do for running automobiles, because it could not be carried around. The storage battery can carry itself and have power enough to run a carful of passengers fifty or even a hundred miles or more. I asked friend Forrest how much work could be done without the storage battery. He said he could run his wife's flatiron, and it would do fairly well for grinding grain, with a mill so arranged that it would not choke up when the wind slackened, etc. The older readers of Gleanings will remember that I ground grain with a windmill forty years ago, when Gleanings was printed on a press that was moved by wind power. Friend Forrest's arrangement is something like this: When he is charging a storage battery, for instance, when the mill comes to a certain speed it makes electric contact so as to send a charge into the batteries. If the wind slackens again so that the charge in the battery might run out backward, this connection, or switch, as it is called, cuts off the current automatically. If in a gale the mill should go too fast the current is interrupted in a like manner, and the momentum of the windmill swings it out of the wind. Let us put it this way for illustration: When the mill gets up to the proper speed the current passes thru the batteries, or by the batteries, and does the work. When the speed or power gets to be *more* than is needed for the work it is doing, the surplus piles up, as it were, in the storage battery. In a like manner, when the wind goes down so there is not speed enough to do the work, the battery turns in and *assists* the windmill.

I think I forgot to mention that, not very long ago, Mr. Forrest supplemented his first 12-foot mill by buying an up-to-date *16-foot* mill to put on the highest elevation on his farm of about a hundred acres. This mill is quite a little distance from his house, barns, etc. But that does not matter, because a wire brings the power. In fact, a great part of his machines are equipped with a little motor so he can have the power to use in any place he pleases. Indeed, he can move his machines about, wherever they happen to be needed; and just by running to it a little slender wire he gets currents of one or more horse power.

Friend Forrest is, I think, a little over fifty years of age; but he is just as full of enthusiasm in keeping pace with electrical science as he ever was; and not only keeping pace, but, if I am correct, he is one of the forerunners in electrical science, especially in the matter of harnessing the winds. He and his good wife are both of Scotch ancestry; and as some of you may not readily "catch on" to the Scottish expression, we have taken the liberty to add a little by way of a sort of preface to the poem, as follows:

BOOK OF POEMS BY ELIZABETH FORREST AXON, A SISTER OF J. F. FORREST.

The following is copied from a little souvenir book of poems which the good wife gave her husband as a Christmas present. In this book containing the poem, on each page is a beautiful picture painted in water-colors by Mrs. Axon, illustrating the windmill, home, and various things referred to in the poem. I wanted to have it copied in half-tone; but Huber says that, unfortunately, we cannot copy colors except at great expense. The name "Keek-afar" probably refers to the beautiful views for miles in every direction from their home on the great hills. I think friend Forrest said that on a clear day they could get glimpses of a town some twenty miles away. Verse 1 has reference to a sheep-shearing machine that is operated by the storage batteries. Verse 5 refers to a gale that once blew half the roof off his barn; and this catastrophe may have suggested "harnessing" this wonderful force so as to make it do his bidding. Verse 9 refers to the lamps in his barnyard, poultryhouse, and all over the premises, which can be turned on or off by means of a switchboard on the porch; verse 10 to the electric lights that cannot be blown out by the wind; verse 11 to the electric vacuum sweeper; verse 12 to the electric fans or blowers in the dining-room and elsewhere; verse 13 to the mill for grinding grain, that makes his "Macaroni breakfast food;" verse 14 to the electric automobile propelled by wind power; verse 15 once more to the sheep-shearing machine. Verse 16 refers to the periods, few and far between, when there is not wind enough blowing over the hills to move the windmill.

To
James Francis Forrest,
owner of the
"Electric Farm,"
and heir to "Keek-afar,"
this poem is
lovingly inscribed.
Christmas, 1916.

THE TEMPERED WIND.

Ye'll hae h'ard o' the Laird o' Keek-afar,
The Laird to the manor born,
Wha's tempered th' win's o' Heaven
An' the helpless lamb has shorn.

A'weel, he dwells aboon us a',
An' farther sees than maist o' men;
But not wi' sight o' or'ner kind—
His vision lies beyond the ken.

Roun' Keek-afar the win's cauld blast
Had lang been felt fu' sore;
For up the valley's wide clear sweep
In freedom wild it tore.

It warstl'd wi' the clinging vines,
It rocked the very hoose;
It dad'it here an' dunt'it there
Till e'en the swine were crouse.

Ae summer day, he'll mind it weel,
The wind on rampage gaed,
An' jes to gie our Laird a hunch
It lifts the roof aboon his head.

The shog—it gars his hair rise up—
It surely is adept;
Wha daurs deny that very thing
Let in the great concept?

The aged tree flings out its arms
To whup the gale its lane;
But, och! the lad that lo'es yer shade
Will sned it w' a vane.

The wildest blast at mirkest hour
But fans the ingine spark;
An' noo our Laird diverts the win's
An' gars them dae his work.

An' noo, jist gang to Keek-afar
An' see that selfsame Laird
Gang pushin' buttons here an' there,
His muscles a' impaired.

An' lichts flash out like will-o-wisps,
Their truth ye canna doot;
The win's can blaw like ony wraith—
It canna blaw them oot.

The fashous gale that raised the stour,
I' faith; twad gar ye greet;
Is fleech'd an' sairly wantin' noo—
It licks the dust frae 'neath his feet.

The selfsame breeze that cooled him syne,
Is bottled erst while noo;
An' when himself sits doon to eat
He gars Boreas fan his broo.

An' syne it filled his mou' wi' dirt,
But noo he scarcely minds;
But smacks his lips on guid auld broze
That's made o' meal Zephyrus grinds.

He does na use Shank's naiges noo,
The road he seldom tak's,
But rides abroad in horseless chaise,
Propelled by juice Aurora mak's.

An' noo the bleat o' puir wee lambs
Is borne upon the breeze;
Their mithers, feckless, in the bield—
The temper'd win' has ta'en her fleece.

But while's auld Zeus is in the dumps,
  Then dour an' sullen are the skies;
The only wind at Keek-afar
  Is jist our Laird's deep sighs.
—Elizabeth Forrest Axon.

As I write the great drawback to this whole business of harnessing the wind is the expense of the storage batteries. Friend Forrest has three of them. He has become so familiar with them that he remodels them, and I think he has built a few himself. Of course the advance in the price of metals has something to do with it; but I am inclined to think at the present time that manufacturers are charging rather more than the circumstances warrant. The battery alone for running such an automobile as I use costs new, for 24 cells, about $260, or a little more than $10 per cell; but a new battery, with ordinary care, will do work for ten or twelve years. Some of them are doing still better. When I suggested to friend Forrest that he might do light work without running his current thru his batteries, he replied that past experience seemed to indicate that a battery would last longer, and keep in better repair, where it is used almost every day, than where it is permitted to stand a long while idle; and that sort of philosophy seems to apply pretty well to old men when they get to be, like myself, close to 80 years old. They live longer, and do more good, where they "keep in the harness" every day. A good friend at one of our beekeeping conventions down in Florida said last winter something like this: "Lots of people die because it does not seem to be of any use for them to live any longer."

Some of you may ask what the text at the head of this Home paper has to do with the talk I have just given you. Well, if you will just think of it I believe you will see where it comes in. These wonderful developments—steam, electricity, automobiles, flying-machines, harnessing Niagara, etc., came about because some good man (or woman) followed the injunction contained in that beautiful text and promise—"seek, and ye shall find;" and our good friend Forrest has for years past been seeking indefatigably, and now he has received his reward. He is so well up on electricity and electric generators and motors that on questions where our college professors seem to be in deep water he is almost at home. Last of all, and best of all, he is a good *Methodist*. God bless the Methodists wherever they may be.

Now, good friends, when the unused wind shall finally turn out like the much-abused sweet clover that grows along the roadside, and shall begin to do the work that has heretofore been done by wood, coal, gasoline, and gas, then remember that your old friend A. I. Root said in this Home paper, "I told you so."

HIGH - PRESSURE GARDENING

THE CHAYOTE OR "BABY-TOES;" SOMETHING MORE ABOUT IT AND OTHER THINGS.

As I sat down this morning to my monthly enjoyment of Our Homes the first thing that caught my attention was an illustration of the "chayote." I recognized the fruit (or, rather, vegetable) in a minute; but as I had never heard it called by such a name, naturally I read the article very attentively. I have been familiar with this vegetable since early childhood. It grew well in Pointe Coupe Parish, La., where I spent many of my girlhood days. It is what the southern catalogs list as "*Scyios* or *Sechium edulis*," and what we Louisiana folks call "mirliton" or vegetable pear. As children we could not twist our little tongues over that French mirliton, so we called them "millie toes;" and a dear little sister, now gone before, one day wanted a second helping, and, having forgotten the toe part, remembered it was only something about the body, and asked mother for some more "millie fingers," which caused a roar of laughter from us larger children. Our home was one of those dear places where children were not relegated to the kitchen or second table; but even the last baby in its high chair, at mother's side, ate with its elders. We were taught to keep quiet and to behave at the table, and that was all there was to it.

Now, Mr. Root, you have "one over" Mrs. Root, as the mirliton is one of the most delicious vegetables when rightly cooked. Here is what one of my catalogs says:

"This fruit forms a delightful dish, finer in flavor than either eggplant, squash, or pumpkin."

Speaking of pumpkin, we Southerners in many places use the young pumpkins and kershaws as squash, cooking them the same way. This is a "hard times" hint, and here is another: Beet leaves, radish leaves, and even *lettuce*, all make fine greens when young and tender. It would really take an expert to tell beet greens from spinach, if cooked the same way.

Now, GLEANINGS, I want to thank and compliment you on your beautiful volume the A B C and X Y Z of Bee Culture, which came to us June 5. I told my better half (J. H. Wheeler) that he should have been as prompt to let you know he received it as he was to keep after you; but he is always very busy. What time he has from his other work he puts in with the bees. I can't help him with them any more than to bottle the honey and melt the wax, as the bees "do me up" dreadfully.

I was quite interested in the Lewis Publishing Co. My husband and I were "charter subscribers" in the *Woman's National Daily* published by him some ten years ago. We were so taken with him that if it had not been we were quite poor at the time he would have had a *hundred* instead of *one* dollar out of us.

Well, I can hear Mr. Root say, "When is that woman going to stop?" so I will "ring off," with best wishes for GLEANINGS.

St. Joseph, La., Aug. 7. MRS. A. A. WHEELER.

My good friend, I am delighted to get further particulars in regard to this wonderful vegetable or fruit. But you do not say a word about the enormous crops it bears in one year, away up into the hundreds or even thousands. The one I pictured is now growing by the poultry-fence; and it is my delight to see it reach up its tendrils and grab hold of the trellis, and then go thru with that unique corkscrew act to pull the vines up higher. It is making such rapid growth that I often note progress in even one or two hours. Of course, it will die when frost comes. Does it stand over winter in the locality you mention? You need not worry about being "rung off" so long as you give us valuable facts, especially in the line of reducing "the high cost of living," my good friend.

SWEET CLOVER, AUTOMOBILES, HIGH COST OF LIVING, AND "GOATS."

Mr. A. I. Root:—I am enclosing a picture of my sweet clover in a young walnut orchard. It is just coming into bloom the second year. It was a mistake to let it get so large before cutting for hay, tho stock of all kinds eat it. The horses shown have had no other feed all summer, not even any grain when working; and they have done all the work of the ranch, which consists of 20 acres under a high state of cultivation. As I said, it was a mistake to let it get so high and coarse; for by cutting earlier I could have secured a better grade of hay, and there would have been another cutting. The plants are now all dead. I also grow sweet clover in the orange-orchard as a fertilizer. A ten-foot strip is planted in the tree rows. This is about the width of the trees, branches and all. Lima beans are grown in the middle, six rows between two rows of trees. Of course the clover in tree rows must be cut with a scythe; but it makes an enormous amount of green fertilizer.

As you are interested in milch goats I will mention that they are growing in popularity in this state. Out here almost every family owns an auto, and just as many take a regular summer vacation. Those of us who are so old-fashioned as to keep a cow have to leave the cow in charge of some one, generally a neighbor, and do without milk on the camping trip, or use milk from a tin can of which one is as bad as the other, in my estimation; but not so with the owner of a *goat*. The goat is simply placed on the running-board of the car; and when you arrive at camp there you are, fresh milk for baby, the same as at home.

Fillmore, Cal., Aug. 27. WM. C. GATHRIGHT.

On page 871 of our September issue Ernest intimated that sweet clover might ultimately take the place of alfalfa. When I remembered that in California alfalfa often takes the place entirely of grain for work horses, I thought he put it a little strongly; but in the above letter friend Gathright tells us that he kept that big team in good order on *sweet clover*—no grain at all. Has anybody else succeeded in accomplishing this? Well, the one fact given above stamps this latter as something of great value; but taking a goat along on the running-board of an automobile is indeed a novel suggestion. I shouldn't wonder, too, if it were one of great value. If I understand it, goats will get right down to business anywhere, and find something to eat. I would have a goat on my wild five acres down in Florida if it were not for the matter of having to care for them when I am gone in the summer time. And, by the way, if all other stock thrives on sweet clover, how about sweet clover for *goats?* If it is not just now found everywhere along the highways and in the fence-corners, it will be very soon. It is my impression a goat would hunt it up and make use of it about as quickly as any other farm stock. Of course, a cow *could* be taken along on a camping trip; and this brings up the question, what is the probable weight of a goat, say one that would give milk enough for the baby and perhaps some other small children? Many thanks for your suggestion, friend G.

GOATS AND GOATS' MILK IN SWITZERLAND AND ALSO IN ARGENTINA.

Mr. Root:—As an attentive reader of your writings I noted with satisfaction that you are also interested in goats and goats' milk. In my native country, Switzerland (where the Toggenburg and Saanen goats were originated), this animal plays an important part in those mountainous regions where the pastures are too steep for cattle. In some Alpine villages the goat-herd, usually a small boy, has charge of the whole flock of the community; and early in the morning, by a horn signal, he announces the departure for the distant pastures, and then the goats from every house gather at the usual meeting-place. At sundown they come back again to the meeting-place, from whence each goat finds alone the house of her master, usually with a well-filled udder—sometimes to the extent that some milk is lost on the way drop by drop. For the less mountainous part of the country, where free range is not close at hand, the goat is kept as a stable-fed animal all the year round—the cow of the poor.

While modern hygiene condemns the use of uncooked cow's milk, the same authorities recommend the fresh goat's milk as wholesome.

In my native city, during the summer months small herds of goats are brought to public gardens and pleasure grounds, where an attractive open stable is provided for them, and a few tables in the open for the guests, mostly children, who get a good-sized glass of fresh rich milk for 10 centimes (2 cents)—at least it was so formerly. Whether the same moderate price can now be maintained is another question, as now the care for sustenance is quite a problem for our people, for the cultivable land amounts to only about one-fourth to one-third of the whole area, the remainder being occupied by mountains, glaciers, lakes, forests, etc., which, altho offering a beautiful scenery, are of little help now. The imports of foodstuffs and raw materials for the well-developed industry constantly meet difficulties, as everything has to pass thru belligerent country.

Speaking of goats, I may say that they are also rather numerous in this section of Argentina (Sierras of Cordoba)—a semi-arid region somewhat similar to Southern California. This summer we had an unprecedented drouth of eight and one-half months, and cattle have died by the hundreds, but only in this section—at least in the cases where the owners neglected to bring their animals to the high sierra, where there is always some grass. But under the same condition, where no cow could exist, the goat has kept the field, and not one goat was lost on account of the drouth. This native race has thus given an excellent proof of its resistance and its adaptability to adverse conditions.

Ernesto Tschudin.

Luyaba, Sierras de Cordoba, Argentina, Feb. 6.

GOATS' MILK.

Mr. A. I. Root:—In your talk about goats' milk in Gleanings for December 1, 1916, page 1138, you quote from the editor, A. C. Gage, of *Angora Journal.* He says that you could not tell the difference from cows' milk and goats' milk out of different glasses but by the richness of the latter. You might tell Gage he should never start to judge honey. If his taste is so poor he would make a poor judge. Many years ago we bought a goat to go among a dairy of cows, as people said it would stop abortion in cows, or, as it was called, "picking calf." The goat had no effect. I had a sister, not strong, and she was advised to drink goats' milk. At my breakfast they used to put some goats' milk among the cows' milk I had for my porridge. They never let on to me, and watched to see the effect. Never once did they manage to cheat me without my knowing the difference, and I do not consider that I am an expert taster; still, I could pick out that peculiar taste. James Smith.

Drungans, New Abbey, by Dumfries, Scotland, Feb. 23.

TEMPERANCE

CARLOADS OF BEER OR CARLOADS OF COAL—WHICH SHALL HAVE THE RIGHT OF WAY?

May the Lord be praised that we have at least *one* woman (Miss Jeannette Rankin) in our national congress; and may he be praised still more for a woman of such ability, and one who is not afraid to call things by their right name. From the Chicago *Herald* we learn that she is making a protest because cars for the transportation of beer (just while there is a car shortage) are given the right of way in place of cars for coal or almost anything else. During the year 1916 368,000 carloads of beer was consumed; and she tells us that 10 per cent of the available cars in the United States are used for moving liquor. Of course, spirituous liquors have been knocked out; but *ten times* as many cars are used for moving beer on account of its greater bulk.

Now, then, good people of the United States, it rests on our shoulders during the coming election to decide which is of the most importance — the transportation of coal or of beer. This good woman also holds up before our eyes the way in which congress has been urging us to save every crumb of bread and every bit of meat, butter, fat, etc.

KENTUCKY—SOMETHING IN HER DEFENSE.

Mr. A. I. Root:—Apropos to your clipping in October Gleanings, p. 806, "Whisky-soaked Kentucky, etc.," allow me to correct both yourself and the *American Issue.* In the first place, let me say I am a Yankee of the Yankees, and proud of it, having been born on Bunker Hill and lived a part of my life there. Kentucky has been the state of my adoption for half of my life, and I am proud of that also. I love her people and the state, altho raised in the North and having had a father whom we called "the last of the Puritans." You will readily see that I have had experience enough to see both sides of the question. Possibly neither you nor the *American Issue* is aware that Kentucky has 108 absolutely dry counties out of a total of 119. This compares favorably with Ohio, the state where the *American Issue* is published. Let it be known that, altho Kentucky has made lots of whisky, the great bulk of it is *used in the North.* There is more illiteracy in the South than in the North (Kentucky included), not because of whisky, but of the different systems of education that in the past have obtained here. When I first came here we had no public-school system worthy of the name. Any one who could make a living at all had money enough to send his children to a private school, and they did it. In later years more attention has been paid to public schools, and most of them will compare favorably with those in the North for towns of equal size; and the private schools have languished in consequence, which is proper. The most of the illiteracy in this state is among the mountain counties and the colored population. We have all over the state so-called "moonlight" schools where any one so disposed can obtain, free of charge, the rudiments of an education. "You can lead a horse to water, but you can't make him drink," holds good both in the North and South. A colored man worked for me over twenty years, and in all that time I could not induce him to come to my house at night and learn to read and write. We are a very good people here, altho "whisky-soaked." Pastors from other states come here and state that central Kentucky has a larger proportion of church members and attendants than any locality they ever heard of. Our population, outside of the three largest cities, is almost pure English. In this county of about 15,000 population I can safely say there are not 100 of foreign birth. Don't kick poor old Kentucky around. *Quit drinking* our whisky. Honey crop this year, one-tenth of last.

Harrodsburg, Ky., Oct. 9. W. H. Reed.

My good friend, I confess I felt worried when I made that clipping from the *American Issue;* but I thought it might have a good effect in calling forth a correction such as you have just made. I rejoice to know that Kentucky has 108 dry counties out of

119; and may God grant that when this comes before you in print there will be a still better state of affairs. If we here in the North have not already *entirely* stopped the drinking of "Kentucky whisky," we are well on the way to it.

TEMPERANCE FROM ALL OVER THE WORLD.

First we have the following from one of our readers in Vancouver, B. C.:

Dear Sir:—I am enclosing herewith a clipping from a local paper announcing the advent of prohibition into this far-away province. It might be interesting to you to know that Canada is now dry, in one continuous stretch, from the Pacific Ocean to the eastern borders of Ontario.

Welfred W. Smith.

Vancouver, B. C., Oct. 1, 1917.

Accompanying the above was a full page from the Vancouver *World,* from which we clip the following:

B. C. PROHIBITION ACT BECOMES EFFECTIVE MONDAY

ABOLITION OF THE BAR A RESULT OF A LONG FIGHT.

On Monday next, October 1, the bar will disappear from British Columbia, by the will of the people of the province.

TWO MILLION BUSHELS OF GRAIN ARE SAVED.

Billy Sunday visited the province and addressed probably two of the largest meetings ever held in British Columbia, at Victoria and Vancouver. At the Vancouver meeting over 11,000 people filled the arena.

We clip the following from the Florida *Grower:*

ONLY TWELVE WET VOTES.

At the special election held on the 18th to determine whether the new county of Flagler should go "wet" or "dry" the "drys" carried the election by an overwhelming majority, there being but twelve votes for the sale of intoxicating liquors in the entire county.

The following is clipped from the *American Issue:*

FLORIDA VOTERS TO VOTE ON STATE-WIDE PROHIBITION;

BOTH HOUSES OF LEGISLATURE PASS BILL SUBMITTING PROHIBITION LAW AT ELECTION TO BE HELD IN 1918.

MAJORITY OF 20,000 EXPECTED BY DRYS; STATE SENATE TAKES ACTION TO CUT DOWN IMPORTATION OF LIQUOR.

Florida, without doubt, will join the list of statewide dry states as the result of a referendum vote of the people to be taken in November, 1918. This vote was taken in the Legislature on April 11. The Senate vote was 29 to 3, and the House vote 62 to 4.

We clip the following from the Florida *Times-Union:*

Key West is now bone dry.

LET THE WOMEN AND CHILDREN SCRAPE AND SAVE IN ORDER THAT THE BREWERS MAY HAVE THE GRAIN TO MAKE BEER FOR THE "MEN FOLKS."

Our good friend Minnie J. Ellis is still alive and on the war-path, as one might readily suppose. Below are some clippings which she sends. I think they are from some articles she has furnished to different periodicals.

Yes, be patriotic; plant your front lawn in potatoes that the brewers may have the grain. Raise your flag over the "Land of the Brewer and the Home of his Slave." God give us a stainless flag.

EAT CABBAGE; GRAIN IS NEEDED FOR BEER.

The Ohio Defense Council is issuing daily bulletins giving all sorts of advice about what to eat and what not to eat—mostly about what not to eat.

The advice about what one should eat is mostly that the people should subsist on bread crumbs, garbage, bon mots, and luxuries left over by the cats in the back yard.

They want us to eat bread crumbs so that the fat brewers can have the grain.

The real meaning of this literary junk boiled to the bone is that Americans should eat this cast-off junk in order that the obese and greasy German brewery overlords may have the grain to make beer with.

They call this sort of thing "patriotism." That is, the Germans call it patriotism. Americans who don't swear, mostly call it jackassery.

PROHIBITION—ONE OF THE SAD (?) RESULTS FROM IT.

The following, which we clip from the *Florida Grower,* probably comes from our friend Russell Kay, who is presiding while the regular editor, Mr. Wright, is off on a vacation. What do you think of it?

And now the booze artists have another argument against prohibition. It is pointed out that bad roads are a direct result of prohibition. A county engineer states that since the bone-dry law went into effect in his territory he had so few convicts at his command that it was impossible to keep the highways in his district in good condition. Now the question arises, Which is of most value to a community; convicts or good roads? It occurs to us that it is possible to enjoy the advantages of good roads without the necessity of employing convict labor. This argument against prohibition is as logical as if it bore the stamp "Made in Germany."

CIGARETTES AND "EFFICIENCY," BY ELBERT HUBBARD.

"As a close observer and employer of labor for over twenty-five years, I give you this: Never advance the pay of a cigarette-smoker; never promote him; never trust him to carry a roll to Garcia, unless you do not care for Garcia and are willing to lose the roll. Cigarette-smoking begins with an effort to be smart. It soon becomes a pleasure, a satisfaction, and serves to bridge over a moment of nervousness or embarrassment. Next it becomes a necessity of life, a fixed habit. This last stage soon evolves into a third condition, a stage of fever and unrestful, wandering mind, accompanied by loss of moral and mental control."

We clip the above from a tract sent us by Irving Keck, Bowling Green, Fla. By the way, somebody suggests that not only our United States but the nations of the earth are ruling intoxicants out of close range of the military camps while nothing is said or done about cigarettes. Just recently a lady asked the editor of one of our daily papers what she should put into a box to send to the soldiers. Among other things the editor replied something like this:

"Don't forget a generous supply of cigarettes." Did you ever? Did Elbert Hubbard make a mistake? I think that every college professor or teacher, and I should like to say every doctor as well as every minister of the gospel, would unhesitatingly say that Elbert was just right about it. Somebody said to me recently that the soldiers in the army, especially where they had not much to do, were using cigarettes to an extent unheard of heretofore.

TROUBLE WITH THE FEET; "FREEZONE," "ICE-MINT," ETC.

Some time last winter I saw a notice in a daily paper about a new remedy for corns, called "Freezone." This article pretended to be a news item from the editor of the paper; but at the bottom of the item was seen the familiar "(Advt.)." I saw at *once* that Freezone was going to be "a hit." I went right up to our Bradentown drugstore, but they were sold out *already*. So many people have trouble with their feet that there was a rush for the drugstore, particularly because the advertisement claimed that all pain and uneasiness would cease at once, and finally that in just a few days the entire corn could be "picked out, roots and all." I finally got a bottle at another drugstore. Very soon afterward there came out a similar advertisement called "Ice-mint." Here is an extract from the advertisement:

> You simply apply a little on a tender, aching corn or callus, and instantly the soreness is relieved, and soon the corn or callus is so shriveled that it may be lifted out easily with the fingers—roots and all—leaving the surrounding skin in normal healthy condition.

Now for the outcome: I applied Ice-mint (to a corn that had troubled me occasionally) night and morning, just exactly according to the directions, for about three weeks. Did the corn drop out as described above? An expression much in vogue down south seems to hit it—"Nothin' doin'." The corn has not dropped out, and, in fact, it has given me more pain and trouble since I began using Ice-mint than any other corn I ever had before in my life. In the directions for use is the old well-known remedy: "Give the foot a good soaking, after three or four days, and protect the corn in some way so the shoe cannot press on it." The above treatment alone gives great help, as we all know. Freezone used by Mrs. Root gave *some* very good results; but as to picking the corn out, roots and all, with the fingers, there was no such "good luck" in our home. Now, as other people may have had an experience different from my own and that of Mrs. Root, and as we may be only an *exception*, if wrong we will humbly beg pardon of the Ice-mint and the Freezone folks, and will give them some free advertising besides. I confess it has seemed to me all along that nobody would claim what these two advertisers do unless there were at least *some* ground for their great claim. Not only are their little advertisements in the daily papers, but I see that Icemint is now taking full-page advertisements in some of our monthlies.

By the way, in regard to keeping the shoe from pressing on the corn, I have made a little invention. Where the callus or corn is on the bottom of the foot, put in your shoe a cork sole with a hole cut clear thru the cork sole large enough to keep all pressure off the corn.

After the above was put in type the "boss printer" informed me that my invention is old, and that he has used a cork sole with a hole in it for years and years, which only goes to show that my "great invention" is, like the biggest part of them, old, and that "there is nothing new under the sun!" But to get back to the feet once more: I find it is very bad for a corn to have the feet get hot, and for that reason I wear, the greater part of the time, some thin cloth shoes to keep my feet cool and give them plenty of air. Was it Abraham Lincols who said, "the feet need to *breathe?*" While the feet should be kept comfortably warm, at the same time they should not be allowed to become hot and feverish by too much covering—especially covering like rubber, (and leather also, to some extent,) that is impervious to air. Freezone costs 35c; Ice-mint, 50c.

TRADE NOTES

SPECIAL OFFER ON ONE-POUND ROUND JARS.

We have available at Des Moines, Chicago, and St. Paul a surplus stock of glass jars as shown which will hold 15 ounces each of ripe honey. These are as handsome a jar as we have ever sold; and on today's market, with the extreme difficulty of getting such ware from the factories, are easily worth much more than the price we are placing on them for a special sale this month. We prefer to reduce the stock to make room for other goods, and offer for this month, while stock lasts, 6 cases for $6.00; 30 cases for $28.50; 100 cases, $90.00. We are particularly desirous of disposing of the stock in Des Moines, where we are closing up our branch and arranging with other parties to handle our goods at that point. Send your orders direct to The A. I. Root Co., Des Moines, Chicago, or St. Paul, whichever point is most convenient. Send remittance with your order, and do it now while stock is available at such bargain prices.

The A. I. Root Co., Medina, O.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Good thick extracted honey for sale in 60-lb. cans.
F. W. Morgan, Bridgeport, Ills.

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Michigan's best white extracted honey in packages as desired. Also comb honey.
A. G. Woodman, Grand Rapids, Mich.

FOR SALE.—Clover honey in sixty-pound cans, 15c per pound; No. 1 white comb, $4.50 per case of 24 sections; No. 2 white, $3.50 per case, six cases to carrier. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Clover, heartsease, No. 1 white comb, $3.50 per case; fancy, $3.75; extra fancy, $4.00; 24 Danz. sections to case, extracted, 120-lb. cases, 15 cts. per lb. W. A. Latshaw Co., Carlisle, Ind.

One or 100 barrels mild-flavored light-amber honey, just right for blending with Northern honeys. For sample and price F. O. B. New York, address Elton Warner's apiaries, San Juan, Porto Rico.

HONEY AND WAX WANTED

WANTED.—Comb and extracted honey.
J. E. Harris, Morristown, Tenn.

WANTED TO BUY beeswax. Highest prices paid. W. A. Latshaw Co., Clarion, Mich.

WANTED.—Honey, carload or less, state lowest price. O. N. Baldwin, Baxter Springs, Kan.

WANTED TO BUY a quantity of dark and amber honey for baking purposes.
A. G. Woodman Co., Grand Rapids, Mich.

Chas. Israel Bros. Co., 486 Canal St., New York. Established 1878. Wholesale dealer in Honey and Beeswax. We buy Honey. Send us samples and the quantities you have, also your best price delivered New York. We pay the highest market price for clean, bright yellow beeswax.

WANTED.—Comb and extracted honey at jobbing prices. National Honey Producers' Association, Kansas City, Mo.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up, and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

$19.00 buys 100 comb-honey shipping-cases holding 24 4 x 4 x 1⅜-in. plain sections, including 3-in. glass, nails, and corrugated paper. This price is f. o. b. our factory in Wisconsin, and includes $1.00 for a subscription to the Domestic Beekeeper the balance of this and ALL of 1918. Address Service Department, Domestic Beekeeper, Northstar, Michigan. Can make prompt shipment.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

2000 FERRETS. Prices and book free.
N. A. Knapp, Rochester, Ohio.

FOR SALE.—100 empty 60-lb. honey-cans, 30 cts. each. John Kneser, Hales Corners, Wis.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

FOR SALE CHEAP.—Several hundred factory made hives; some new, some used two or three years. All 10-frame. Oscar Ritland, Elroy, Wis.

SEND TODAY for samples of latest Honey Labels for comb and extracted. Not only the most attractive, but also the lowest in price. Samples free. Liberty Pub. Co., Sta. D, Box 4-E, Cleveland, Ohio.

FOR SALE.—McKinley Music-selling Outfit; also Century stock and filing system, f. o. b. California. Good $20 hand cider-press, f. o. b. Indiana. All half price. G. K. Hubbard, Riverside, Cal.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

$21.00 buys 100 comb-honey shipping-cases holding 24 regular beeway sections each, including 2-in. glass, nails, and corrugated paper; also $1.00 for a subscription to the Domestic Beekeeper the rest of this year and ALL of 1918. Address service Department, Domestic Beekeeper, Northstar, Michigan.

GOATS

FOR SALE—Nubian grade milk goats, does and kids. Tell me what kind you want.
R. M. Collins, 630 S. 22d St., Muskogee, Okla.

POULTRY

Roosters from Eglantine strain. A few roosters for sale, $5.00. Descendants of the world's champion 314-egg hen. No show birds, but layers. A few orders booked for hatching eggs, $3.00 per setting. Paul Marquardt, 829 Teutonia Ave., Milwaukee, Wis.

WANTS AND EXCHANGES

WANTED.—Albino queens. Who has Albinos?
D. E. Lhommedieu, Colo, Iowa.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED.—One four-frame extractor, reversible, but not necessarily automatic; must be a bargain.
Joseph S. Scott, Mt. Pleasant, Ala.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered.
The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

WANTED.—To buy for cash an apiary in the southern states, preferably in Florida. Emile, care of B. Auguste, 232 O. T. Johnson Building, Los Angeles, Cal.

$20.00 buys 100 comb-honey shipping-cases holding 24 4¼ x 4¼ x 1½ plain sections, including 2-in. glass, nails, and corrugated paper. This price is f. o. b. our factory in Wisconsin, and includes $1.00 for a subscription to the Domestic Beekeeper the balance of this year and ALL of 1918. Address Service Department, Domestic Beekeeper, Northstar, Michigan.

REAL ESTATE

FOR SALE.—One twenty-acre farm with ginseng beds. Also 200 swarms of Italian bees and a quantity of fine honey put up in 60-pound cans at 15c a pound. L. Francisco, Dancy, Wis.

FOR SALE.—110 colonies of bees in new ten-frame dovetailed hives, frames wired, full sheets foundation used; metal-roof covers, with inner covers. Location goes with outfit. A 100-per-cent paying investment. Price and description on application, extracting outfit. Custer Battlefield Apiaries, Hardin, Mont.

VIRGINIA AND NORTH CAROLINA FARMS $15 per acre and up. Easy payments. Fruit, dairy, stock, climate, schools, churches, roads, markets, and neighbors of the best. Get our farm lists, magazine, and other interesting literature, all free. Address F. H. LaBaume, Agr. Agt. N. & W. Ry., 246 N. & W. Bldg., Roanoke, Va.

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads; schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders, free. C. L. Seagraves, Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

Do you want a farm where largest profits are made? The South's great variety of crops and wonderfully productive climate make it the most profitable farm section of America. It is the place for the lowest-cost meat production and dairy farming. It grows the largest variety of forage crops. Good lands, in good localities, as low as $15 to $25 an acre. Let us show you locations that will give the highest profits. M. V. Richards, Commissioner, Room 27, Southern Railway System, Washington, D. C.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

PHELPS queens will please you. Try them and you will be convinced. C. W. Phelps & Son.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Cortlandt St., New York.

FOR SALE.—Bees, queens, and honey in their season. H. G. Quirin, Bellevue, O.

"She-suits-me" bright Italian queens; $1 by return mail till Oct. 1.
Allen Latham, Norwichtown, Ct.

Three-banded Italian queens and a few hundred pounds of bees for sale. Safe arrival guaranteed.
J. A. Jones, Rt. 3, Greenville, Ala.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

When it's GOLDENS it's PHELPS. Try one and be convinced.
C. W. Phelps & Son, Binghamton, N. Y.

FOR SALE.—Twenty colonies of Italian bees. For particulars address W. R. Houghtaling, Box 25, Sharon, Conn.

Tested leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Vigorous prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing.
A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Italian queens, THE HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each.
Henry S. Bohon, Rt. 3, Box 2112, Roanoke, Va.

Golden Italian queens, good as the best, to close out quick. Price, select tested, $1.00; tested, 75 cts.; untested, 50 cts.; no discount of any kind.
D. T. Gaster, Rt. 2, Randleman, N. C.

My bright Italian queens will be ready to ship April 1 at 75 cts. each; virgin queens, 35 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

The demand for PHELPS' GOLDENS has been so great that we shall not be able to fill orders for less than $12.00 a dozen for the remainder of the season. Single queens $1.00 as usual. THEY ARE BEAUTIES! Try one. C. W. Phelps & Son.

NOTICE.—I am now uniting nuclei for winter, and have some fine young queens on hand for prompt shipment at 75 cts. each or 12 for $7.00. Bees from this strain of Italians have this poor honey season stored 150 lbs. honey per colony.
J. B. Hollopeter, Queen-breeder, Rockton, Pa.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money refunded by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

ITALIAN QUEENS, northern-bred, three-banded, highest grade; select untested, guaranteed; queen and drone mothers are chosen from colonies noted for honey-production, hardiness, prolificness, gentleness, and perfect markings. Price, one, $1.00; 12, $9.00; 50, $30.00. Send for circular.
J. H. Haughey, Berrien Springs, Michigan.

PHELPS GOLDEN ITALIAN QUEENS combine the qualities you want. They are great HONEY-GATHERERS, BEAUTIFUL and GENTLE. Mated, $1.00; dozen, $12.00; tested, $3.00; breeders, $5.00 and $10.00. C. W. Phelps & Son, Wilcox St., Binghamton, N. Y.

SWARMING CONTROLLED . . . .

Use same fixtures, get ready for spring manipulation. . . . Charles Thompson, Marion, Iowa.

PATENTS Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.

Chas. J. Williamson, McLachlan Building
WASHINGTON, D. C.

Our Food Page.—Continued from page 857

do not care for the lettuce, substitute celery, or the salad could be omitted.

The crust to the pumpkin pie could be omitted; but if you wish a crust, try one made of part whole-wheat flour. We think it is quite as good. Also if you take pains to have all your ingredients very cold, and use as little water as possible, you can make a tender, flaky pie crust with very little shortening, thus saving fat and benefiting your digestion. Pumpkin pie really needs a bit of cheese; but make it very small, for the dinner has enough food value without it. The nuts are also unnecessary, but put in a few for the kiddies.

MARYLAND CHICKEN.

Divide the chicken in pieces for serving; roll in flour, and season lightly with salt and pepper. Put in covered roaster; dot with bits of chicken fat; pour in cold water until you can see it; cover and bake very slowly until tender, which will be several hours if it is an old fowl. This is an ideal way for cooking a rather old fowl, as it will cook tender more quickly than if stewed, and will taste much like fried chicken. Use what flour is left from flouring the chicken for thickening the gravy in the pan.

PUMPKIN PIE DE LUXE.

½ cup sugar
2 eggs
1 tablespoon honey
1 teaspoon salt
1 teaspoon flour
1 teaspoon ginger
½ teaspoon cinnamon
1½ cups milk

Mix the flour, salt, and spices with the sugar; beat in the eggs lightly; add the honey and then the milk. Stir until smooth and pour into a plate lined with whole-wheat pastry. One of the eggs may be omitted. Substituting cream for a part of the milk is a great improvement.

HONEY BRAN DROPS.

½ cup shortening
2/3 cup honey
1 egg
2/3 cup sour milk
2 cups bran
About 2 cups flour
2/3 teaspoon soda
½ teaspoon salt
1 teaspoon baking powder
1 cup raisins

Blend the shortening with the honey slightly warmed; beat in the egg; add the sour milk, the bran and the flour in which the soda, salt, and baking powder have been sifted. Use enough flour to make a drop batter. Add the raisins last. Bake on a well-oiled cooky sheet, leaving plenty of room for them to spread.

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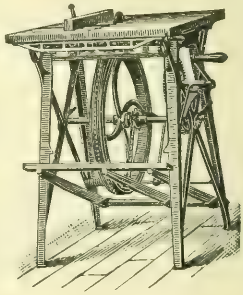

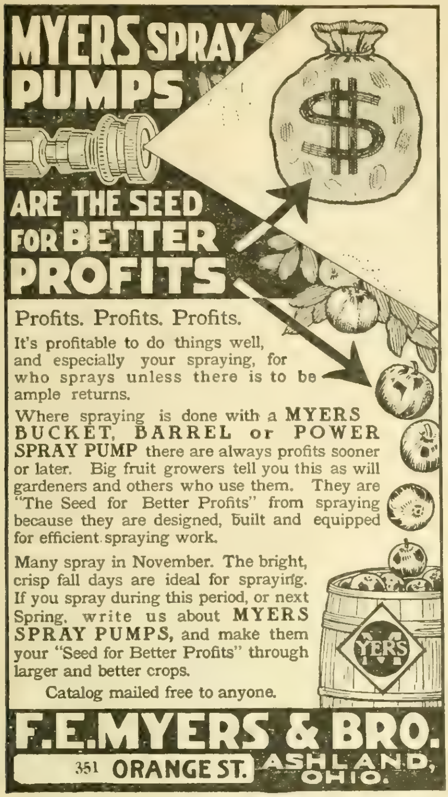
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AROUND THE OFFICE

M.-A.-O.

Dear Reader:—This is going to be a solemn occasion. It's about skunks—skunks and bees, skunks and men—and I'm not for fooling much about skunks. I've been there myself. So I know skunks ain't to be made light of—not if you get enough and a little more. This ain't my fight, either, and perhaps it's none of my business. But Mel Pritchard, our queen and bee rearer, has been stomach aching around the office about half the summer telling what the skunks have been doing to his apiaries—and also a little to him. He has had three apiaries this season. Two of these have been skunky, and one has been free from skunks. One of the skunky apiaries, nine miles from his home, 30 colonies, was all o. k. and strong in early spring. But later skunks had their own way, for Mel was too far away to take a hand. From this colony he didn't take a pound of honey nor a pound of bees, and the colonies are left weak to go into winter quarters. His home yard was skunkerized, but there Mel captured a half dozen of the varmits by his odorless method (to be explained later in this treatise), and then succeeded in getting only 12 pounds of bees for sale out of this home yard and no honey—the skunks doing a lot of damage despite the owner's best efforts. A third apiary, located 10 miles from our queen-breeder's home, had no skunk troubles, and yielded 200 lbs. of bees for sale uses, and is in fine condition this fall. So Mel says he can't really recommend skunks for the apiary. But he's been studying them hard this summer, using a flash light in making his nocturnal investigations. He says they begin troubling more or less in the spring, but are worst in the hot weather of midsummer, when the bees cluster on the outside of the hives and the young skunks have got big enough to enjoy a bee lunch. The same individual skunks have come to Mel's home yard night after night, and seemed to feed on bees till they were filled full up, keeping at it three or four hours at a lick. If the bees are clustered outside, the skunk ever so carefully grabs his tidbit, one at a time, with his mouth, throws the bee on the ground, rolls it over and over with his paws (probably till its stinger is out of commission), and then eats it. He gets away with about three a minute. If the bees are all inside the hive when the skunk arrives for supper, he proceeds to scratch and claw the outside of the hive till the bees begin rushing out, when he puts into operation the same catching and eating process as when he finds them clustered outside. Mel says he has half a notion that the skunk seizes the bees by their wings with his mouth—the skunk does this very carefully, at least. The bees seem never to attack a skunk—perhaps they are afraid of his stinger. Mel has curiously

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Around the Office—Continued

noticed that, when his skunkship is lunching off a hive of bees, some bees will crawl out into the grass and sound the same peculiar wail as do bees in the South when attacked by red ants. He has seen a skunk take note of this wailing sound, follow it till he finds the bee, and then proceed to eat it. As a final observation, our queen-rearer says that perhaps the worst work of skunks in an apiary is not the amount of bees destroyed but the general demoralizattion that the skunks seem to work in the hive. They put the bees to the bad, and completely uncondition them. Finally, Mel recommends a poultry fence, perhaps two feet high, well grounded, placed entirely around the apiary, to beat the skunks. Now, that's talking more sense at one time than I am used to. I have got to quit it right off. But I thought you would forgive me for giving you a little of Mel Pritchard's natural-history observations. For that sad-faced, serious, bucolicky philosopher is some nature observer I want to tell you. Oh, yes! about that odorless method of capture of his. I almost forgot that. It's a regular humdinger—when it works. When it don't work, it's a binger on the fellow trying to work it, also a lasting regret and great disappointment (to the odorless operator, understand, not to the skunk). But I am going to take Mel's part in this discussion and defend his system—if he'll promise not to come over here to the office and hang around for at least a full month after the next time it fails again. You see, Mel has been modestly qualifying around these parts for some years past as a sort of skunk expert. He doesn't advertise to-eat-'em-alive, eat-'em-alive while-you-watch; but he does give it out rather confidentially to almost everybody in this part of North America that he can juggle with a skunk of average even

Mel demonstrating just how to do it—and hoping the durndest nothing will happen.

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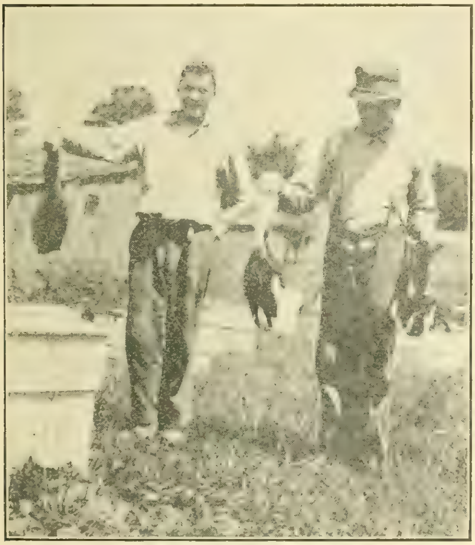
Around the Office—Continued



His son and Mel prove that skunks can be manhandled and the man-handlers live thru it, too.

temper, capture him barehanded, and not have to sleep in the barn for a week afterward, either. Mel doesn't seem able to tell just how he does this. Ask him, and he'll tell you experience is a mighty great teacher. His exact words are: "Some experience is necessary to know just when to grab a skunk by the tail, but a plaguey sight more is necessary to know when NOT to." There doesn't seem to be any snake-charming business about it. He says you mustn't irritate the skunk unduly. Approach him leisurely and pleasantly, allaying any suspicions of hostility that may get started in the skunk's mental processes. Trot along beside him for awhile in a playful manner—but always stop when he does, and take immediate observations as to whether his tail is over elevated a little and whether he is contemporaneously and earnestly aiming at you over his right fore shoulder. If he is, go away immediately and for quite a little while. Don't go up at such a time and harshly tread on him continuously nor try to rub his ears together. It won't work—that is, the way you would have it work, for the skunk is likely not to like it. So wait in a perfectly friendly manner just out of range till the storm signals are lowered, and then when he has started along again resume your position at his side (do this rather nonchalantly and indifferently). Now trot along beside him as before until such time as you feel you have won his entire confidence. About this time also win a sure and very sudden hold on his tail; hoist quickly with a deft upward upheaval of the arm and body—and there you have him amid air, possibly a little surprised but not resenting it so much as you might think. That, in brief, is Mel's system in this very hair-trigger business. But there is one accompanying theory of this system of Mel's, namely, that a skunk can't transact business with all his feet clear of the ground, that Mel says ain't so. He learned it wasn't so by finding it out. It was some years ago. A neighbor of his had got or found a skunk in a sort of big pot-hole in the ground from which it couldn't get out. He at once became avaricious for skunk fur, disregardful of any rights the skunk might have in the matter, and was wondering how he could get the skunk out of the pot-hole and reduce him to good skinning condition without being too heavily penalized in the process. It was just then that Mel (bearing even in those far years a local reputation as a skunkologist and odorless operator) came along. His neighbor put the whole case up to him—aspirations for acquisition of skunk fur without too much skunk, misgivings in

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Around the Office—Continued

undertaking the enterprise, etc. Mel, right off the bat, assured the good neighbor it was almost as easy as rolling off the proverbial log, and proceeded at once and successfully to take a cord out of his pocket, tie a slip noose in it, rig it to the fork of a stick, slip it over the skunk's tail (soothingly), tighten the slip knot, and hoist that skunk out of the pothole and suspend him from a limb of a nearby tree, where he dangled with his feet on nothing—no atmospheric disturbance, either—slick as a greased pig's ear. "There, neighbor," said Mel, "you can kill that skunk with a club now, skin him, and go right from here to church. You see he can't get his feet on anything." The neighbor never faltered. One whack over the skunk's head set him to whirling around and around—also a fine, greenish, bluish, purple mist. A more perfect revolving, self-acting sprayer has never been devised. The neighbor was trustingly well within the zone of action. Mel says he (Mel) wasn't. His wife says he was. Everybody concerned testifies that in about one-third second there was a good deal of greenish, bluish, purplish something in the air besides mist of foresaid colors. Mel admits this was largely directed at him, and was mostly made up of sound. He also says he couldn't get up any explanation good enough to be accepted wholly or even in part. The neighbor seemed real provoked about something, and rude, and also persistently talkative. Mel says he can't now recall the entire conversation down there in the woodlot, but knows more of it was directed to him than to the skunk, and mostly sounded like "You know a-h— of a lot about skunks, you do," etc., and so on. Mel says he remembers he came away about that time. His wife says that why she thinks Mel was within range as well as the neighbor was that she got on to his coming home before he got in sight from back of the barn. Any way, Mel says that ever since that time he has held as entire bosh the theory that a skunk with his four feet off the ground and in mid air can't hang out the sign, "Business as usual." Nine times out of ten he won't, but the tenth time he may.

* * *

If I were certain of ever returning to this momentous question at some future time for a really exhaustive discussion of it, I wouldn't now add that Mel not so long ago offered some expert advice and dissertation to Mr. Kellogg, the man in charge of the A. I. Root Co.'s ledger department, as to how to remove one mother skunk and her young ones from said Kellogg's cellar where they had clandestinely domiciled. Mel completely gained our expert bookkeeper's confidence, in some way or other, who tried it on. Mel says he failed to follow directions, or used bad judgment at a critical moment. Kellogg says he didn't. Kellogg also is known to have said something to Mel, who was present taking expert observations and standing just outside Kellogg's bathroom window. Kellogg's very recently worn suit, underclothes, stockings, etc., came out of the bathroom window first, and then this: "Mel, you may know something about rearing queens, but what you don't know about handling skunks would fill the Middle West."

* * *

Here's another use for honey—sent me by Stancy Puerden. I am going to give it in her exact words. It is just as plain as

Around the Office – Continued

the nose on your face tho, that she invites some real “language” in mentioning it. But she wants M.-A.-O. to do it — like letting George do it. But I won't. I won't use good cuss words for anybody but myself, so I won't. I am not the public cusser. So here is just what Stancy Puerden wrote me: “Dear M. A. O.:—While I was peacefully sitting at my typewriter working at my November copy I heard the managing editor out in the street. You know his voice carries some, so I had no difficulty hearing what he said. He was putting Mr. Puerden wise to a new wrinkle in shaving. What was my horror to hear him say he dipped his shaving brush in honey to make a lather that won't dry so quickly as a pure soap lather does. Just think of wasting a valuable food like honey on the outside of his face, and at a time when it is so hard to get enough honey to fill our orders, too. It made me especially indignant because I am coming out with a honey story in this issue. I thought of telling of it in my page, but am afraid I could not get it by the editor, for he seems to read my page before it is published, and I have imagined he does not read yours—at least not very thoroly. If you care to mention the matter you may, and you have my permission to say anything you like about my indignation at the sinful waste of food material in war time. The neighbors know my feelings so well that they hide their frosted cakes when they see me coming. If Hoover objects to frosted cakes what would he say to frosting men's faces with honey lather?”

* * *

In reading an old volume of Gleanings the other day I found one on “Uncle Amos” that made me snicker, so I pass it along. It was in the volume of 1888. “Uncle Amos” was trying to give dear old “Rambler” (you older readers all remember him) some friendly suggestions as to quitting his bachelor life, and the printers got it in this way: “Now I wonder if it never occurred to your bachelor friends that even a weed in the garden of Eden itself would not have amounted to very much without the companionship of womankind.” In the next issue, 50 pages later, “Uncle Amos” made a plaintive apology, saying that what he intended to state was, “Even the Garden of Eden itself would not have amounted to very much without the companionship of womankind.”

* * *

Albert J. Wright, attorney and counselor-at-law at Bradford, N. Y., in sending a year's subscription for Gleanings, adds: “I am in bed sick with sciatica, and must have something to read, and Gleanings fills the bill.” What in Samhill does he mean? Has Gleanings come to be a counter-irritant for sciatica? I'll bet a man with sciatica likes some of the real sort of language in “Around the Office” that in the good old past has been found there, and which the Roots and a lot of other misguided good people are trying to choke me off from—durn it all!

* * *

Thanks, Mr. Reeder of Fisher's Ferry, Pa. Your appeal to the Editors has strenghened a little my very slight hold on “Around the Office” job. I have used mighty few cuss words this month, too, you notice. I calculate that will moderate “Uncle Amos's” disposition toward me some. But it's strangling the liberty of the press, all the same, and I am almost suffocating for want of free and full expression of my most important views.

* * *

An inquirer out at Bison, Kansas., asks Gleanings if wild bees will accept tame beeswax, or if tame bees will accept wild beeswax. Now, who knows how to tame wax? Dr. Miller? (By the way, Dr. Miller, I haven't told you that I like you along with J. E. Crane—but I do.)

BOOKS AND BULLETINS

“FORTY-TWO YEARS BEEKEEPING IN NEW ZEALAND” — 1874-1916 —

Reminiscences by I. Hopkins.

The title above well suggests the scope of the little monograph from far-away New Zealand. It is not a manual for the apiary, nor a handbook for the beeman of that island nor any other island. Mr. Hopkins, the author, an Englishman of nearly half a century's experience in apiculture in New Zealand, recorded the growth and development of beekeeping in a series of articles that were published in “The New Zealand Farmer” for 1915. For the sake of his oldest friends in apiculture, Mr. Hopkins has had a few copies reprinted, and bound in neat blue cloth binding. The little volume has only the modest number of thirty-eight pages. But within the brief compass of his work Mr. Hopkins has painted a vivid picture.

Even Australia seems out of the world to the average American; but one must sail 1500 miles further east by south from Melbourne, Australia, to reach New Zealand, a dual island, rudely boot-shaped, a British colony situated in the southern hemisphere, 40 degrees south of the equator, between 170 and 180 degrees east of Greenwich; in short, it is on almost the exactly opposite side of our old earth from Greenwich (180 degrees would be just opposite), and is as far south of the equator as Korea and Japan are north. It has, roundly speaking, 103,000 square miles—almost identical in size with Colorado. It is situated in an almost isleless sea, without neighbors for 1500 miles in every direction. It is nearer to our California than to any other part of the United States.

The subjects in the book are treated in

paragraphs, each paragraph arranged under appropriate headings. A few of the headlines will serve to show the order of treatment, which is chronological. For instance, the first topic is ''The Importation of the Hive-bee into New Zealand;'' then ''Primitive Beekeeping;'' ''The Honey Market in Those Days;'' ''Beekeeping in Other Countries;'' ''The First Stage of Progress in New Zealand;'' ''The First Movable-frame hive in New Zealand;'' ''The First Honey Raised Under the New System,'' etc. In fact, a list of all the headlines would give a fairly good idea of the entire work.

There were no honey-bees (Apis mellifica) in New Zealand previous to 1838. Only two species of native bees existed, neither of them being of any use as honey-gatherers. The first honeybees came from England, March 13, 1839.

The methods used in the first apiaries were primitive, following the crude methods of the cottagers of England. The hives were common boxes with cross-sticks to support the combs—a form of hive common in the United States a half a century ago. Straw skeps were also used. Sulphuring the bees in pits was the common way to take off honey.

Read what the author says on page 5 under the title ''The Honey Market in Those Days.''

> For some years after I came to New Zealand, 51 years ago [he is writing from Auckland, New Zealand, March, 1916], the only honey I saw for sale was what the Maoris (the Maori was the native New Zealander) hawked about in old kerosene-cans or some other old tins—a conglomeration of honey, wax, and bee-grubs. The latter was considered a delicacy by the older Maoris. All was mixed together, and was usually obtained from bee-nests in the "Bush," plentiful in those days. Occasionally strained honey, free from wax, etc., would be offered; but as it was generally believed, with good reason, that the straining cloths used by the Maoris were parts of discarded blankets that had served as body-wrappers in the hey-day of their usefulness, the venders found very few customers.

Early in 1874 Mr. Hopkins became deeply interested in practical beekeeping. No one previous to that time in all New Zealand knew anything about the progress of apiculture or modern methods in other countries. The flora of New Zealand was wonderful, and beefarming impressed the author as a great possibility if modern methods could be employed.

Now note the role that the United States played in New Zealand apicultural developments. In 1878 Mr. Hopkins learned from an English journal something of the doings and writings of A. I. Root in this country. He wrote to Mr. Root at once and received in reply a copy of Gleanings and a price list of fixtures. At the same time he obtained from London a copy of ''Langstroth on the Hive and Honeybee.'' He then ordered from Mr. Root a comb-foundation machine, a honey-extractor, a smoker, and some other appliances, in the meantime making several L. hives from the instructions he had received. The comb-foundation machine was the second one to leave the United States—the first one going to North Scotland. It cost Mr. Hopkins $70 in New Zealand. The honey secured by Mr. Hopkins under the new methods was from the Bush, and was too thick to extract; and so he produced for a time only comb honey in one-pound sections—which, by the way, were in four pieces and had to be nailed together with great labor.

In 1880 Mr. Hopkins began writing on beekeeping topics for the ''Thames Advertiser'' and the ''Auckland Weekly News.'' His writings led him into a supply business. Then came the introduction of the Italian bee in 1879 by Mr. Harrison, of Coromondel, New Zealand, and Mr. Hopkins, the former gentleman receiving his bees first, altho Mr. Hopkins had ordered his first. They came from Mr. R. Wilkin, of San Buenaventura, California. Mr. Hopkins had ordered his Italian bees from Mr. Root, and was told that California was nearer to New Zealand than New York, and was advised to order from California accordingly.

The growth of modern beekeeping in New Zealand was wonderful. While few inventions were made there, the beemen utilized the best that was then known in the United States and England, and thus all developments were along scientific lines. It is interesting to note that the progress of beekeeping methods of New Zealand kept very nearly apace with the industry in America and other English-speaking countries.

In 1882 the first queen-rearing was started, and that same year official permission was obtained to send queens thru the mails. In 1883 out-apiaries were begun. In 1883 Mr. Hopkins began ''The New Zealand and Australian Bee Journal.'' In 1884 occurred the first general bee and honey show in New Zealand, and at a special meeting called during this exhibition was formed the first National New Zealand Beekeepers' Association. This new association adopted the ten-frame Langstroth hive as a national standard. Early in 1880 foul brood had appeared in New Zealand, and for 20 or more years the beemen of the country had a hard fight with the disease. The box-hive man was the great menace and obstacle to the conquest of the pest, there as elsewhere. On April 28, 1888, the government of New Zealand passed a foul-brood and disease-in-bees prevention act. As a result, tho the disease still lingers in places, it is in a fair way to be suppressed altogether, as the author says on page 35.

In the introduction the author makes a boast that seems a little sweeping. He says: ''I have no hesitation in saying that we lead the world in beekeeping. I am aware it is a big claim; but when we consider that no country has such an effective apiaries' act for controlling diseases, and such compulsory regulations for government trading of all honey leaving the country, annual registrations of apiaries and supervision of all imported bees, besides permanent inspectors of apiaries, I do not believe it will be thought an idle boast.''

Undoubtedly there is a bright future for New Zealand beekeeping. There were in 1915 11,200 beekeepers on the island, owning 74,340 colonies, whose annual output was valued at $250,000.

Following so closely as it does on the heels of Tarlton-Raymont's recent work, ''Money in Bees in Australia,'' this little monograph of Mr. Hopkins on beekeeping on another island in the great oceanic group is of special interest and worth. Our own Dr. Phillips has already made beemen familiar with Hawaiian beekeeping. With Australian and New Zealand apiculture vividly portrayed within the past two years, we are almost around the world in our beekeeping data. The East is almost reaching the West. Only the Fiji Islands and a few neighboring groups yet remain. Beemen will soon ''join hands across the sea,'' and perhaps yet realize what Kipling called impossible in his beautiful ballad:

Oh! the East is the East
And the West is the West,
 And never the twain shall meet
Till the earth and the sky stand presently
 At God's great judgment seat.

But there is neither East nor West,
 Border nor breed nor birth
When two strong men stand face to face
 Tho they came from the ends of the earth.

[It would not be fair to close this review without stating that Mr. Hopkins sent this booklet with his sincere regards to our pioneer in apiculture, A. I. Root, written with his own hand.—ED.]

Special Notices by A. I. Root

Off for Florida, (after Ohio is *voted dry*, God helping us) on Nov. 6th.

SWEET CORN—ALL ABOUT IT.

I hold in my hand a very pretty book of over 200 pages (and a whole lot of nice pictures), and it is all about sweet corn. You might wonder, before looking the book thru, how there could be enough to say just about sweet corn, and no other kind, to make a good-sized book. Sweet corn was first found among the American Indians, we are told; and this has been improved, and new varieties worked out, as you may be aware by looking over the seed catalogs, until it has got to be quite an industry, especially in supplying the early markets. I was particularly interested in the chapter on transplanting sweet corn; and only last May, when we got back here to Ohio from Florida, I made some tests of seed with both sweet and field corn. Of course, this was done indoors; but after my tests the plants were growing so thriftily, and looked so handsome, I transplanted about a dozen hills out in the garden when it was about time to plant outdoors. These few hills gave nice corn fully two weeks ahead of the others.

Now, where you can get a good price for the first sweet corn that appears on the market, it will, no doubt, pay to start the little corn-plants indoors. Of course, this book discusses all about canning and *drying sweet corn*. The price of it is only 75 cents postpaid. You can address the O. Judd Co., New York, or you can order it of us if you prefer to do so.

GREENHOUSES; THEIR CONSTRUCTION AND EQUIPMENT.

The above is the title of a beautiful book of 269 pages, just put out by the O. Judd Co. It contains 131 illustrations, many of them beautiful photographs. As our older readers may be aware, greenhouses and gardening under glass has been a hobby of mine more or less for sixty years; and I am greatly pleased to get hold of a volume so ably written, and clear up to date as this one, which has just been put out in the year 1917. I think it will pay any one who has anything to do with greenhouses, hotbeds, or coldframes, to get this splendid book. It is by W. J. Wright, Director of the New York State School of Agriculture. Down in Florida, especially in the southern part where our home is, most people seem to think there is no need of sashes, especially glass-covered frames; but in my experiments last winter in forcing potatoes I found three or four sashes to be of great value. The use of cloth-covered beds for celery, tomatoes, and other plants, is, of course, quite common down there. The above book covers so thoroly and intelligently the different opinions in regard to the construction and management of everything pertaining to "gardening under glass" that I deem it of great value. The price is $1.60 postpaid by mail. Address the O. Judd Co., New York. You may order it of us if you prefer to do so.

ALFALFA FOR GREENS; SOMETHING ABOUT ANOTHER GOOD FRIEND AWAY OFF IN CALIFORNIA. SEE PAGE 397.

Friend Root:—I read what you said in regard to alfalfa used as greens, and, tho I stripped the leaves and we used the very tenderest tips, it was "no go."

Recently, with three members of my family I paid a visit to our mutual friend W. A. Pryal, of Oakland. We had a most delightful visit with him and his estimable family over a week, and visited all points of interest in Oakland and vicinity, and had some good talks of old times and the old beekeepers of long ago. Friend Pryal is a well-posted man in regard to all things apicultural, and it is very interesting to talk with him. We took a journey over the mountains in our Ford of over 1500 miles, and saw the big trees and other wonders of this wonderful state. We had no trouble or expense with our car during the long journey, and we had some steep climbing up the mountains.

Enclosed find renewal to GLEANINGS. I don't know how many more renewals I shall make. It all depends on how long you and I live. So long as you are alive I want GLEANINGS.

Hoping you may be spared many years yet to cast your influence on the side of all that is good and right, I remain Your old friend,

E. T. FLANAGAN.

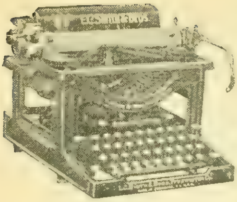
San Gabriel, Cal., Aug. 10.

My good friend, our experiments were made with alfalfa when it was just starting in the spring; and I think if you cut the tender shoots when they are just a few inches above the ground you will find they will make splendid food. I hope, my long-time friend, that you may be spared to make many more renewals; and we can all say, as our good friend Dr. Miller did a while ago, we are going to try to live just as long as we possibly can.

A MATTER OF "LIFE AND DEATH."

We clip the following from the *Journal of Electricity* (California). It may save your life if you will read it carefully:

> Between the rails of a railroad there are, ordinarily, just four feet eight inches and a half, and the rest of the unsafe space does not exceed three feet; yet with all the rest of the world to stand and walk on, some 11,000 people every year find it necessary to their employment to end their days or their health on this narrow strip of land.



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John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

Candy for Winter Stores

Be sure your bees have enough for winter. If they are short we have just the thing you want, candy in large paper plates weighing about two pounds each, enough to last three to four weeks, two will go nicely on a hive. Write for prices also catalog of supplies.

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Also build manure spreaders, cream separators. 300,000 satisfied customers, some near you. Close shipping points save freight. My free catalog describes Galloway goods. Get it before buying.

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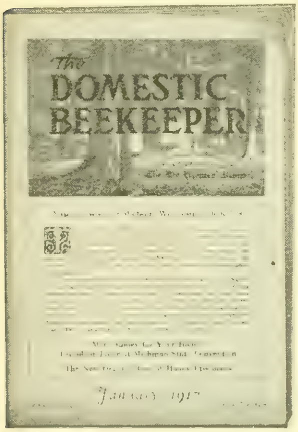
J. B. MASON, Manager.

Shipping-cases for Comb Honey

We are prepared to make prompt shipments. We want you on our mailing list. Send for our catalog.

August Lotz Company, Boyd, Wisconsin



Why You Should Subscribe For
"THE DOMESTIC BEEKEEPER"

The editor being a honey-producer, with no interests in beekeepers' supplies other than to get them to the honey-producer at the lowest possible price, and also being interested in getting a good price for his own crop of honey, would naturally be interested in getting a good price for the crop of others. In other words, *The Domestic Beekeeper* is working all the time for the interest of the honey-producer, helping him to sell his crop to better advantage than heretofore, also helping him to secure his supplies at better rates. All these advantages are set forth in the columns of *The Domestic Beekeeper* from month to month. No live producer can afford to miss the editorials on how to get a better price for his surplus honey. Read how to get 15 cents per pound for extracted, and $2.25 per dozen for comb honey in a wholesale way in each number of the *Domestic.* Also, how to buy your beekeepers' supplies at wholesale.

We haven't room here to tell you of the many advantages you will receive by subscribing for *The Domestic Beekeeper.*

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Just as the bee, fruit and poultry business hook up well together, so do these three journals—all leaders in their several fields. Realizing that a large number of our readers would like practical information along these lines, we have again arranged with the publishers of a great fruit journal and a great poultry journal of the country to club with Gleanings in Bee Culture, at a special low price of $1.00 for all three.

Green's American Fruit Grower

Chicago, Illinois

This is two old and great fruit journals recently combined, namely, Green's Fruit Grower of Rochester, N. Y., and the American Fruit Grower of Charlottesville, Va., with both of the editors of these two journals now in editorial charge of the new and larger and better fruitman's journal. These two men are Samuel Adams, one of the most successful orchardists in America, and Chas. A. Green, for 36 years editor of Green's Fruit Grower, and a country-wide authority on trees and shrubs. The new-old journal is better than ever. Each issue tells in season what the orchardist and fruit raiser most wishes to know—and it is up to the minute. Its variour departments must all interest every home-maker.

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Syracuse, New York

This great poultry authority, established 1892, is devoted to interests of both fanciers and practical poultrymen. It is authoritive and helpful in all branches of poultry work, from hatching and rearing the chicks to maturing fowls for show room and market. Tells how to get eggs at the least cost, how to feed to get best results. No detail left out. It is the second oldest poultry publication in the United States and stands second to none in its value to poultry raisers. It is helpful to the beginner as well as the expert. The newest and best in poultry literature is found between its covers each month. This paper will help you to success in the management of your poultry, and by following the valuable information given you should be thrifty and prosperous.

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Gleanings in Bee Culture, Medina, Ohio

The A. I. Root Co., Publishers

How About Next Year?

THE SEASON OF 1917, JUST CLOSED, HAS BEEN A MOST UNUSUAL ONE. BEEKEEPERS WHO DID NOT FORTIFY THEMSELVES EARLY IN THE SEASON BY SECURING THEIR HIVES, SECTIONS AND OTHER GOODS AND HAVING THEIR EQUIPMENT READY FOR THE BEES, FOUND THAT WHEN THE HONEY SEASON WAS UPON THEM THAT THEY WERE UP AGAINST THE FOLLOWING CONDITIONS:

EVERYBODY WANTED BEE GOODS—DEALERS HAD DEPLETED STOCKS ON ACCOUNT OF THE UNUSUAL DEMAND—MANUFACTURERS WERE SEVERAL WEEKS BEHIND ON ORDERS—THEIR FACTORIES WERE WORKING OVERTIME, SOME BEEKEEPERS WERE DELAYED, SOME DISAPPOINTED, SOME GOT THEIR GOODS WHEN IT WAS TOO LATE.

Now, Mr. Beekeeper, what are You Going to Do about Next Season?

Prospects are favorable for a big demand for bee supplies next year. Profit by the experience of the past. Prepare!! Order your goods this fall. Write us or our dealer nearest you for a list of new prices.

If you are not on our mailing-list, write us at once and we will send you a catalog containing name of the distributer nearest you, and in this way you will also be sure to receive a copy of our new 1918 catalog when it is issued, which will be in January, as usual.

LEWIS

Hives and sections and all other goods are made from the best material and are scientifically manufactured.

OUR GUARANTEE

We absolutely guarantee our goods to be perfectly manufactured of the best material for the purpose. On examination, if our goods are not as represented, we do not ask you to keep them. Return same at our expense and we will refund your money, including any transportation charges you have paid. If you purchase our goods from one of our distributers, the same guarantee holds good, as we stand back of them.

Remember, in harmony with the general call made by the President, all beekeepers now owe it to the nation, in order that beekeeping may fulfill its highest obligation, to redouble their efforts to increase the importance of beekeeping as an agricultural industry which conserves a valuable national resource and which produces a non-perishable, concentrated, wholesale food which plays a very important part in the endurance of any nation.

Order your bee supplies early and order standard goods in order to save time and enable manufacturing plants to accomplish the most in the shortest possible time.

G. B. LEWIS COMPANY

Watertown, Wisconsin, U. S. A.

Send for catalog giving name of distributer nearest you.

Gleanings in Bee Culture
A Queen Mating Yard

Vol. XLV December, 1917 No. 12

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Do not sell until you have seen us.
We will pay you SPOT CASH for any thing you sell us.
Get our prices on cans and cases.

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Old Combs and Cappings

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CONTENTS

DECEMBER, 1917

Editorials 910
Inspector W. D. Wright ....R. F. Holtermann 912
Queen-Rearing Troubles ....The Editors 914
Demuth's Plan of Wintering ....E. R. Root 921
Gleanings from North, South, East and West...Department Editors 924-929
Beekeeping as a Sideline ....Grace Allen 930
Conversations with Doolittle..........................G. M. Doolittle 932
Letters from a Beekeeper's Wife..........................''Mary'' 933
Co-operative Association ....E. G. LeStourgeon 933
Using Capping-melter in Winter..........................J. J. Byer 935
Imbedding with a Ford ....Edw. A. Winkler 936
City Current for Imbedding..........................Jay Smith 937
Making Increase in September..........................R. F. Holtermann 938
Introducing by Honey Method..........................Henry S. Bohon 939
Stray Straws ....Dr. C. C. Miller 940
Our Food Page ....Stancy Puerden 942
Siftings ....J. E. Crane 944
Our Neighbors' Fields..........................E. G. Baldwin 945
Beginner's Lessons ....H. H. Root 946
Gleaned by Asking..........................E. R. Root 947
Heads of Grain 948-950
Just News ....The Editors 951
Our Homes, Gardening, etc..........................A. I. Root 954
Index 960
Man Around the Office ....M. A. O. adv. pages

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Editor Home Dept.

H. H. ROOT
Managing Editor

J. T. CALVERT
Business Manager

"When we receive your Honey
Return mail brings your Money."

The Fred W. Muth Co.

Get Service Like this Man

Lake City, Mich., May 5, 1917.

Friend Muth:—Your letter with check for $146.20 for wax has been received. Thanks. I do believe you beat them all when it comes to quick returns for goods shipped you. I may have some more wax to sell after we get our cappings melted.

Yours truly,
(Signed) Elmer Hutchinson.

We Want Immediately

Extracted Honey

We buy all grades of Extracted Honey. Large or small lots. Send sample and price. If price is right we will buy. Parties who have Fancy and No. 1 Comb Honey, write us at once. We will buy from 40 to 50 carloads this season.

Beeswax

Send us your beeswax. We pay highest market prices, and send you our check the same day shipment is received.

Old Comb

Make some spare money from the wax rendered from your old comb. We will render it, charging only 5 cents per pound for rendering, and pay you best market prices for the wax rendered.

Shipping-cases for Comb Honey

We are prepared to ship you the same day order is received any number of shipping-cases. Several carloads are here now, ready for buyers. Send your order in now before our supply is exhausted. We sell Lewis Beeware.

Remember We remit the same day your shipment arrives. Read the letter above and be convinced that this is the house to send your shipments to. Try us.

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Early-order Discount

The early-order cash discount for December is three per cent. The number of producers who take advantage of special discounts for fall and winter orders is constantly increasing. Send us a list of your 1918 requirements, and we will furnish you with quotations. Root's Goods only. The quality is right. . . Beeswax wanted.

M. H. Hunt & Son, Lansing, Mich.
510 No. Cedar Street

NOTICE!

Honey . Wanted . Honey

Do not forget, when your crop of honey is ready for sale, to send us a sample. State your price, also how it is put up. We are in the market for unlimited quantities, and will pay cash on arrival. Let us hear from you before selling your crop.

C. H. W. Weber & Co., Cincinnati, O.
2146 Central Avenue

HONEY MARKETS

There is little new to be said as to the honey market. Prices are higher and honey is scarcer. Apparently, there is very little of the 1917 crop remaining in the hands of the honey-producer. Sugar is scarcer than a month ago, and the abnormally high prices at which it is sold in the war countries of Europe may advance honey prices to an even still higher level than at present.

The monthly crop report issued by the U. S. Dept. of Agriculture for November gives the average yield per colony in the United States as 40.3 lbs. per colony, which is about 25 per cent less than last year, and 5 per cent less than in 1915. This report calls attention to the very large increase in local consumption of honey, due to sugar shortage. Only 29 per cent of the honey crop of 1917 is being sent to "outside markets," as against 36 per cent so sent last year. This fact, together with the decreased yield, results in only about 60 per cent as much honey going into the main trade channels as was so handled last year. So this condition has made for much higher honey prices generally.

Buyers report that there is little comb honey in sight, and only a very little extracted here and there still remaining in the hands of beekeepers.

What we said about the price of honey last month remains true, namely: "The price of honey is what the owner can get." We might add that that price is a very high one and likely to remain so.

Below we quote prices of various big city dealers. We have not received the U. S. Gov't honey-market report for any date in November, and so are unable to give our readers the Government's market figures.

General Quotations of Wholesalers.

CHICAGO.—The movement in honey of all kinds has been quite free during the past month, especially in extracted, for which there has been an active foreign demand, and as high as 16½ cts. per lb. has been paid, which has stiffened the market up so that for the best grades of white clover and similar goods 17 cts. is obtained. Ambers sell at from 1 to 3 cts. less according to flavor and quality. White comb, A1 to fancy, brings 22 to 23. Amber grades range from 1 to 3 cts. less. Beeswax is steady at 35 to 37 cts. per lb. R. A. Burnett & Co.
Chicago, Nov. 17.

SAN FRANCISCO.—With reference to quotations on honey from jobbers to retailers, we will state that the market is higher all around on all honey. We cannot tell you what the jobber is charging the retailer. We understand comb honey is being jobbed locally from $4.00 to $4.25. Extracted honey is closely cleaned up, white selling up as high as 16 cts. per lb., and dark ambers up to 14, while some dark is bringing only 11 to 12. Export buying has closely cleaned up most lots, and this is the principal source of outlet at present for lower grades of honey.
San Francisco, Nov. 12. Leutzinger & Lane.

LOS ANGELES.—Very little comb honey is being offered. Practically no extracted honey is left in the hands of producers. We quote comb honey, fancy, per case, $5.00; No. 1, $4.85; No. 2, $4.50. Extracted honey, white, per lb., brings 16; light amber, in cans, 14; amber, in cans, 11 to 13c. Clean average yellow beeswax brings 50 cts.
Los Angeles, Cal., Nov. 14.

LIVERPOOL.—During the past month the demand for honey on this market has been active, with the result that prices have advanced two cents per lb. All the foreign honey that comes to Europe from various parts of the world is extracted honey, the only comb honey being of local production, which is more or less sold by retail where it is produced, and consequently it is scarcely worth our while quoting it, because it could not be transported here from abroad to arrive in a satisfactory condition. As regards extracted honey, the bulk of this arrives here in barrels from 150 to 600 lbs. weight each, and the quality and condition vary. However, we think the only quotation that is of interest to readers will be the wholesale price for extracted honey of the best quality, which is to-day here about 20 to 21 cents per lb. The market is steady at this price, and we do not see any sign of decline for the present. While honey has firmed, the demand for beeswax has slackened off, buyers being scarce. Good pure quality is worth from 45 to 47 cents per lb.
Liverpool, Eng., Nov. 3. Taylor & Co.

Later, by Cable.—Best quality extracted honey 24 to 26 cents per pound. Taylor & Co.
Liverpool, Eng., Nov. 21.

DENVER.—Our present prices to retailers are as follows: Extra fancy white comb honey, per case, $5.00; No. 1 white comb honey, $4.50; No. 2 comb honey, $4.00. Extracted white honey, according to quantity, brings 16 to 18; light amber extracted, 14 to 15. For clean yellow beeswax delivered here, we are paying 38 cts. in cash and 40 in trade.
The Colorado Honey Producers' Association.
Denver, Colo., Nov. 17. Frank Rauchfuss, Mgr.

ST. LOUIS.—The demand for comb honey is very moderate, as the price seems to be too high to let it go into consumption. Supplies of comb honey are very limited. Extracted honey is in good demand, and market not overstocked. We quote comb honey, extra fancy, per case, $5.00; fancy, $4.75; No. 1, $4.25; No. 2, $3.50 to $4.00. Extracted honey, light amber, in cans, brings 15 to 16; amber, dark, in cans, 13 to 14. Clean average yellow beeswax brings 38½. R. Hartman Produce Co.
St. Louis, Nov. 16.

BOSTON.—Market is cleaning up short, both on comb and extracted. We quote comb honey, extra fancy, per case, $5.00; fancy, $4.75; No. 1, $4.50; No. 2, $4.00. Extracted honey, white, brings 18 to 20; light amber, in cans, 18; in barrels, 15.
Boston, Mass., Nov. 17. Blake-Lee Co.

CLEVELAND.—Demand is more active at the advanced prices. Receipts have been light thus far, and the supply now in market is very limited. We quote comb honey, extra fancy, per case, $5.50; fancy, $5.25; No. 1, $4.75.
Cleveland, O., Nov. 17. C. Chandler's Sons.

BUFFALO.—Receipts are light. Demand is good. Quality of stock is good. Scarcity of sugar seems to have stimulated the demand for comb and extracted honey. Stocks seem to be well cleaned up. Comb honey, extra fancy, per case, brings 22; fancy (buckwheat) 20. Extracted honey, white, brings 16 to 17; amber, in cans, 15 to 16.
Buffalo, N. Y., Nov. 16. Gleason & Lansing.

KANSAS CITY.—We are cleaned up on both comb and extracted honey. Trade is good. Dealers have light stocks on hand. We are selling best comb to grocers at $4.50 to $4.65. Extracted honey, white, brings 15; light amber, in cans, 14; amber, 12 to 13. Clean average yellow beeswax brings 35 to 40.
C. C. Clemons Produce Co.
Kansas City, Mo., Nov. 16.

SYRACUSE.—The demand for honey is about the same as last month. The price having advanced limits the sales to a degree. I have nothing to offer except to my home trade. Some grades are exhausted. Comb honey, fancy, brings per case, $4.80; No. 1, $4.50; No. 2, $4.30. Extracted honey, white, per lb., 16; light amber, in cans, 15. E. B. Ross.
Syracuse, N. Y., Nov. 16.

NEW YORK.—The market on honey is in such an irregular condition that we do not feel justified in quoting any prices, as they change from day to day.
New York, Nov. 16. Hildreth & Segelken.

PORTLAND.—Demand for comb honey is light on account of high prices. Quality is good. Extracted is in fair demand only. Quality is very good, but sales are slow at present on the high prices asked. We think stocks will be cleaned up soon. We quote comb honey, fancy, per case, $4.50; No. 1, $4.25; No. 2, $4.00. Extracted honey, white, brings 18; light amber, in cans, 17; amber, 16. No beeswax offered. Pacific Honey Co.
Portland, Ore., Nov. 12.

ARIZONA.—Honey is all sold. Market closed very strong. Clean average yellow beeswax brings 35 to 36. Wm. Lossing.
Phoenix, Ariz., Nov. 16.

HAMILTON.—Honey is all cleared up but a few 60-lb. tins. We were disappointed in not getting a shipment of comb honey which was on the way to us, so are entirely out. White extracted honey in 60-lb. tins brings 18 cts.; light amber, in 10-lb. tins, 18. F. W. Fearman Co., Ltd.
Hamilton, Ont., Nov. 15.

MONTREAL. — Continuing good demand for honey. Supplies are not as large as expected. Comb honey, extra fancy, brings 21; fancy, 20; No. 1, 19; No. 2, 17. Extracted honey, white, brings 19; light amber, in cans, 18; in barrels 17½; amber, in cans, 16, in barrels, 15½. Gunn, Langlois & Co., Ltd.
Montreal, Nov. 16.

TORONTO.—Honey is almost exhausted on this market. We have only 10-lb. tins left which we are selling at $1.95 per tin. Eby-Blain Limited.
Toronto, Nov. 15.

MATANZAS. — Extracted honey, light amber, brings $1.35 per gallon. Clean average yellow beeswax brings 35. Adolf Marzol.
Matanzas, Cuba, Nov. 15.

TO DISCONTINUE SUBSCRIPTION RECEIPTS.

After Dec. 15 next, we shall discontinue the practice of sending receipts for subscriptions by letter or postal card, and ask our readers to look for their receipt in the change of subscription date made on the mailing address of the journal. The purchase of a new mailing machine enables us to print the date of expiration of subscription more fully than heretofore and so plainly that no subscriber can fail to note such change if he looks for it.

Will our subscribers please watch for this change of date after renewing their subscriptions? However, subscribers are to remember that when their subscriptions reach our office later than the 20th of the month, their mailing address will not show the change of subscription date on the wrapper of the next GLEANINGS received, but the change will appear on the mailing address of the second journal received thereafter.

The record of all subscriptions received will be kept with unusual care in our office and credit be given here in our books, while our subscribers will find corresponding credit given in the subscription expiration date on their mailing address.

We shall appreciate prompt notification from our readers if their mailing address ever fails to show them proper credit given for remittance for subscription—always remembering that remittances received after the 20th of any month will not bring a change in the subscription date on their mailing address until the receipt of the second journal thereafter.

If our readers will co-operate with us in this matter, their kindness will be greatly appreciated in aiding us to offset somewhat the constantly increasing publisher's cost and to meet a shortage of office help. J. T. CALVERT,
Business Mgr. Gleanings in Bee Culture.

CHANGE IN PRICE

It has become necessary, in order to continue at all our low-price three-club orchard-poultry-bee journal offer, to advance the price of the club from $1.00 to $1.25, still giving the value of $2.00 for $1.25. So remember:

Gleanings in Bee Culture . .
Green's Amer. Fruit Grower
American Poultry Advocate
$1.25

[Canadian postage, 75c extra; foreign postage, $1.25 extra.]

This combination can be secured only by writing direct to the publishers. You can't get it thru any subscription agency. Secure it now. It may not last always. Write today to

Gleanings in Bee Culture, Medina, Ohio
The A. I. Root Co., Publishers

BARGAINS

To Close Them Out

Old Numbering

30	AED5-10 hives, flat; price in 5 lots,	$7.25
5	AFD5-10 hives, flat; price in 5 lots,	7.25
45	2L-8 supers; price in 5 lots,	2.50
185	D8-8 supers; price in 5 lots	2.50
30	D8-10 supers; price in 5 lots,	2.75
2	Little Detective scales; each	3.00
1	Swiss wax-extractor,	2.50
30	division-board feeders for Danz hive; each	.19
5	cases half-pound panel jars; per case,	.70
10	cases one-pound panel jars; per case	.90
23	cases one-pound premium jars; per case	.60
1	gross half-pound Tip-top jars,	4.50

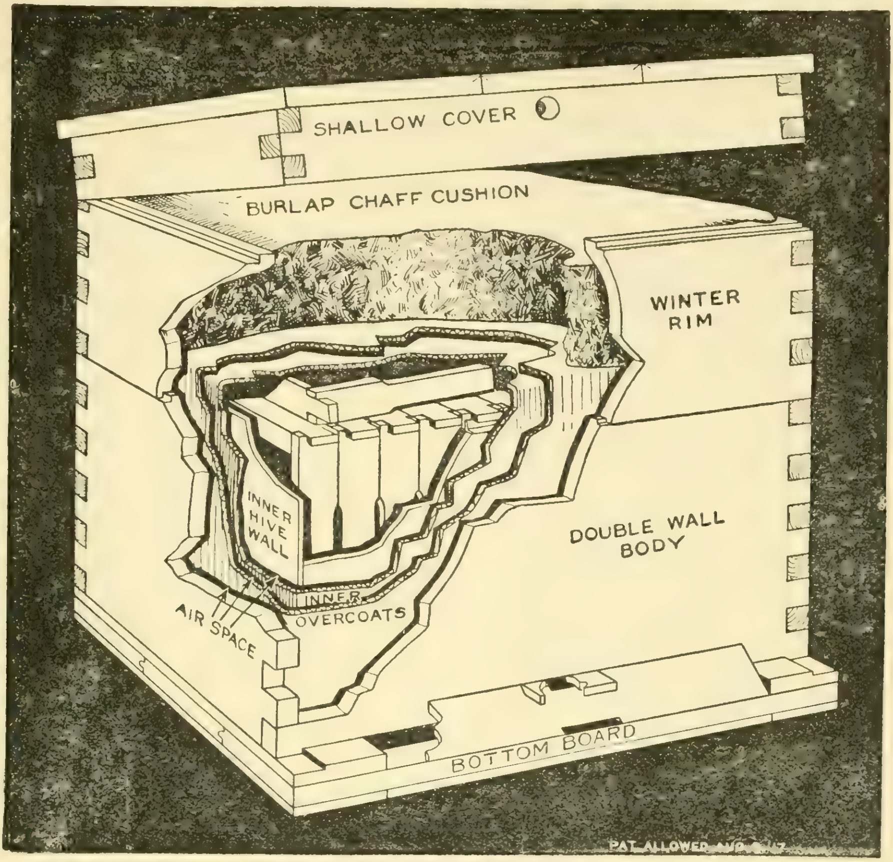
We also have some of the Danz hives, nailed and painted, with one super. Write for prices.

The above prices are good only until January 1. If you can use any of the above send in order early.

F. A. Salisbury, Syracuse, New York

1631 West Genesee St.

WOODMAN'S New Protection Hive


SHALLOW COVER
BURLAP CHAFF CUSHION
WINTER RIM
INNER HIVE WALL
DOUBLE WALL BODY
AIR SPACE
INNER OVERCOATS
BOTTOM BOARD
PAT. ALLOWED AUG. [illegible]

The Hive with an inner overcoat. . Wintered 100 per cent perfect in 1916-17. . . Winter Problem Solved.

The same dimensions as formerly. The construction now is such that a bottomless corrugated paper box can be telescoped down over the brood nest, in between the outer and inner hive walls, as a matter of insulation or protection when preparing them for winter. The work of preparing the bees for winter with this system is a joy. In Spring the boxes are removed and stored away in the k. d. flat. A new circular with large illustrations will describe all. Send today for one.

TIN HONEY-PACKAGES

YOU WILL MAKE A MISTAKE if you do not ask for our LOW PRICES on Friction Top Pails and Cans. We are SAVING MONEY for carload buyers and others of smaller lots, why not you? Our three-year contract is enabling us to make prices a considerable under general market quotations. Let us hear from you, specifying your wants.

FRICTION-TOP TINS

	2 lb. cans	2½ lb. cans	3 lb. cans	5 lb. pails	10 lb. pails
Cases holding	24	24	..	12	6
Crates holding	...	..	..	50	50
Crates holding	100	...	100	100	100
Crates holding	603	450	...	203	113

A. G. Woodman Co., Grand Rapids, Michigan

How About Next Year?

THE SEASON OF 1917, JUST CLOSED, HAS BEEN A MOST UNUSUAL ONE. BEEKEEPERS WHO DID NOT FORTIFY THEMSELVES EARLY IN THE SEASON BY SECURING THEIR HIVES, SECTIONS AND OTHER GOODS AND HAVING THEIR EQUIPMENT READY FOR THE BEES, FOUND THAT WHEN THE HONEY SEASON WAS UPON THEM THAT THEY WERE UP AGAINST THE FOLLOWING CONDITIONS:

EVERYBODY WANTED BEE GOODS—DEALERS HAD DEPLETED STOCKS ON ACCOUNT OF THE UNUSUAL DEMAND—MANUFACTURERS WERE SEVERAL WEEKS BEHIND ON ORDERS—THEIR FACTORIES WERE WORKING OVERTIME, SOME BEEKEEPERS WERE DELAYED, SOME DISAPPOINTED, SOME GOT THEIR GOODS WHEN IT WAS TOO LATE.

Now, Mr. Beekeeper, what are You Going to Do about Next Season?

Prospects are favorable for a big demand for bee supplies next year. Profit by the experience of the past. Prepare!! Order your goods this fall. Write us or our dealer nearest you for a list of new prices.

If you are not on our mailing-list, write us at once and we will send you a catalog containing name of the distributor nearest you, and in this way you will also be sure to receive a copy of our new 1918 catalog when it is issued, which will be in January, as usual.

LEWIS

Hives and sections and all other goods are made from the best material and are scientifically manufactured.

OUR GUARANTEE

We absolutely guarantee our goods to be perfectly manufactured of the best material for the purpose. On examination, if our goods are not as represented, we do not ask you to keep them. Return same at our expense and we will refund your money, including any transportation charges you have paid. If you purchase our goods from one of our distributors, the same guarantee holds good, as we stand back of them.

Remember, in harmony with the general call made by the President, all beekeepers now owe it to the nation, in order that beekeeping may fulfill its highest obligation, to redouble their efforts to increase the importance of beekeeping as an agricultural industry which conserves a valuable national resource and which provides a non-perishable, concentrated, wholesome food which plays a very important part in the endurance of any nation.

Order your bee supplies early and order standard goods in order to save time and enable manufacturing plants to accomplish the most in the shortest possible time.

G. B. LEWIS COMPANY

Watertown, Wisconsin, U. S. A.

Send for catalog giving name of distributor nearest you.

GLEANINGS IN BEE CULTURE
DECEMBER, 1917

EDITORIAL

TWO CHEAP METHODS OF PACKING

THE DEMUTH method of packing colonies of bees in regular hives and supers has the merit of cheapness. Many people would put their bees in double-walled hives or large quadruple packing-cases were it not for the expense. The four-hive cases with the single-walled hives are as expensive as four double-walled hives. The amount of lumber in an ordinary quadruple case amounts to between $4.00 and $5.00, or from $1.00 to $1.25 a colony. Of course this investment may be good for ten years; but even then it will be 10 to 12 cents a year per colony. The lumber in a Demuth inner packing-case will not cost to exceed 10 or 12 cents, or, on a basis of ten years, a little over one cent a colony.

Mr. C. P. Dadant, at the Springfield convention, called attention to the method of outdoor winter packing which he has been using for a good many years with marked success. He makes no claim as to what it will do for other people in other localities; but he says that for where he lives it is a success. It is so simple and cheap that many would think it is good for nothing; but it is to be remembered that the Dadants do not recommend anything unless it has merit. Here is the plan:

Common forest leaves are pushed up around the two sides and the back of the hive. A strip of poultry netting of suitable length and width holds the packing in place when the two ends are fastened to the front which is not protected. One can use two, three, or six inches of packing in this way according to the locality and he can put it on any time now—the sooner the better.

Over the top of the hives is placed a straw mat, for Mr. Dadant is a believer in upward ventilation. The cap, which is some five or six inches deep, is filled with forest leaves and set over the hive. It will be seen that the whole hive is packed except the front, which faces the south.

The objection was raised that this packing would get wet and freeze, and be worse than nothing; but the proof of the pudding is in the eating. If it does get wet and freeze it does no harm. The presumption is that the packing is dry most of the time during winter. Forest leaves will not hold moisture; and even if they were wet down by rain they would soon dry out because the vertical layer is exposed to the air thru the netting.

While Mr. Dadant did not mention it, double and packed division-boards, one on each side, could be put in the brood-nest, increasing the amount of packing on the sides.

There are some to whom this method of packing might appeal. It costs but very little to try it out, at all events.

* * *

DELAYED-SHIPMENT COMPLAINTS

THIS YEAR we have received many complaints from purchasers of bees and queens because the shipments arrived too late to be used, or were not delivered at all. The reports from the breeders themselves in the last issue, and in this number as well, give the "other side."

In view of the fact that these complaints have been so numerous and so serious, GLEANINGS now announces its intention of making still more rigid the conditions for bee and queen rearers who desire advertising space in its columns. One of these requirements will be that the queen or bee rearer advertising in GLEANINGS guarantee to ship bees or queens within five days of the time agreed upon in correspondence with the prospective purchaser, or, being unable to do so, will notify the purchaser at once when shipment can be made. If the purchaser cannot wait, the breeder is to return the money advanced. Perhaps it may be wondered why we do not stipulate that queens and bees shall be delivered on the exact date set. Weather conditions often make it impossible or inadvisable to ship at any precise time. But the customer should have the assurance that when he places his order the stock will be sent within a reasonable time of the day agreed on.

A delayed shipment is often a serious matter to the honey-producer. When bees or queens, or both, are promised by the middle of May and delivery is not made before the middle of June, the customer has a good right to complain. In that month, during which he was awaiting the arrival of queens or bees, the colony might have nearly doubled in strength, and quite likely would have been in fine condition to produce honey.

In many cases of complaint recently made to Gleanings the bees and queens were not shipped at all; but all kinds of promises were made by the rearer that shipment would be made within a short period, and this promise not kept. In some cases promises of shipment made even the year previous were broken. No one can think well of doing business in this way, for the shipper holds the money while the purchaser holds the bag, and not only holds the bag but is left to wonder whether he will ever get the bees or queens at all, or his money back.

Of course, last season's conditions were so bad for queen and bee rearing that the breeders positively could not make shipments as promised and expected. This fact, however, does not alter the rightfulness of the proposition that the queen or bee rearer owes it to his prospective customer to inform him precisely as to conditions and when the delayed shipment can and will be made, and give that prospective customer the option of either accepting shipment at a later date or the return of his money.

In formulating new conditions for entering into our advertising columns we propose also to come to the defense of the bee and queen rearer against the unfair or dishonest customer by establishing this rule: That in case a customer claims that a queen has arrived at its destination dead, this dead queen be returned at once to the shipper; and in case the claim is made that the bees shipped arrived at their destination dead, or in bad condition, that the report of the express agent or other carrier to that effect be secured and sent to the shipper.

It is certain that the time has come when there should be definite terms and conditions established between the queen or bee rearer and his customers. These terms and conditions should establish a definite understanding, and put an end to the shipper and customer each having his own interpretation of right and wrong in this important matter of buying and shipping bees.

CONSERVATION OF WINTER STORES

FOR COLONIES that are wintered outdoors it is highly important to have the summer brood-nest contracted down to a space of two-thirds or three-fourths of the full hive capacity. It is in line with the practice of our best beekeepers. In the case of a ten-frame hive the reduction will make a winter nest of seven or eight combs, and in an eight-frame hive five or six combs. No matter whether the frames are stood on end as shown on page 921 of this issue or whether they hang as they do in summer, the brood-nest should be contracted.

Many beekeepers have for years, in the milder climates, wintered successfully in single-walled hives by merely putting a two-inch packed division-board one on each side of the brood-nest. This makes three-inch walls or packing for the sides, and seven-eighths for the ends. Some dry leaves or other packing material in a super is then put on top.

It goes without saying, that a much better arrangement is a double-walled hive having packed spaces on the ends as well as on the sides. Many beekeepers have made the mistake of leaving for winter the full set of combs in even a double-walled hive. It is always possible and advisable, even in such hives, to contract down the brood-nest to two-thirds or three-fourths of the summer capacity by putting in two packed division-boards on each side. In a double-walled hive we increase the amount of packing space and protection.

The new Demuth plan of wintering bees on Langstroth frames on end, as illustrated on page 921, calls for reducing the size of the brood-nest in order to get sufficient packing between the inner and outer walls.

The smaller the actual size of the brood-nest during winter, the less cubic capacity the bees will have to warm up. In other words, it will require fewer units of heat and less drain on the bees to warm up a brood-nest of seven-frame capacity (whether stood on end or left horizontal) than it will take to warm a hive of ten-frame capacity; and when we make the room smaller, and at the same time make the packing-space greater, we are putting that much less tax on the vitality of the bees.

When the temperature of the inside of the cluster is below 57 Fahr., it is necessary for the bees to generate heat by activity that is a severe tax on their supply of stores as well as on their vitality. We can save much of these stores and this tax by giving the bees less room to warm up, and more packing, or both.

Our own experience shows that a colony in a single-walled hive will consume from 50 to 75 per cent more stores than one well and amply packed with a brood-nest reduced down to a capacity no larger than is necessary to take the cluster and the combs.

When it is almost impossible to get sugar, the importance of reducing the size of the winter nest, and at the same time increasing the amount of packing, cannot be too strongly emphasized. The beekeeper who fails to give his bees every advantage is wantonly wasting stores, and at the same time he is killing his colonies. Right now, when there is such a demand for sugar, it is the patriotic duty of every beekeeper to save sugar stores and increase the amount of sweets by producing honey. The likelihood that the war will be over by next January has gone glimmering. We may see several Januaries yet with the war still on.

* * *

SUGAR FOR FEEDING

MOST BEEKEEPERS had their bees supplied either with artificial or natural stores before the sugar shortage came on. Some of them, however, were caught badly. In a few cases we have learned that beekeepers have been able to get sugar from wholesale houses by showing that, for every pound of sugar they get, they can raise at least ten pounds more, for honey is sugar. Where sugar is given out in this way it does not contravene the spirit and purpose of the government regulations.

In some cases, as pointed out in our last issue, brown sugar can be secured; in others molasses, and in still others cheap candy. Where one is located near a candy-factory he can get the sweepings of candy from the floor. While this will be a conglomeration of everything, it will make a very fair syrup when strained thru cheese-cloth. But from now on, candy should not be melted up, but given to the bees on top of the frames in wooden butter-dishes. If it is very hard and dry it should be moistened. In no case should glucose be used. In the first place it is difficult to get bees to take it, and in the second place it will kill them before spring.

In some localities, not even two pounds of granulated sugar can be obtained. In Cleveland, for example, the housewife cannot get anything in that line. This means that she will be driven to the use of honey provided it can be had.

QUADRUPLE WINTER PACKING-CASES

WHILE ADMITTING that the large cases afford the most ample protection to outdoor wintered colonies, and while they are undoubtedly superior to anything else for northern climates for outdoor wintering, they have some drawbacks. First is the cost, amounting to five or six dollars per case; second, the great amount of work in packing and unpacking; third, they are not suitable where outyards have to be moved frequently from one locality to another; fourth, they cause a great amount of drifting, or at least we have had considerable trouble in our locality. In order to make the plan work, the hives should be placed and kept in groups of four all summer, back to back and side by side. After the four hives are slid together and packed in one big case the appearance entirely changes, and for a day or two the bees act very much confused. After midwinter flights, such as we have in our locality, we sometimes find one colony very strong and the other, right beside it, quite weak. This is caused by the fact that the two entrances are so close together that when the bees are flying at one entrance pretty strong they are apt to draw the other bees just coming out. Fifth, when hives are placed in groups of four, it means that one pair of entrances will have a much more advantageous position, so far as exposure is concerned, than the other.

Prize Articles Wanted

The editors of Gleanings wish to harvest the best experience and best methods of management learned anywhere during the past season. To this end we offer cash prizes for papers on the following subjects:

For the most practical, money-saving plan of management, accompanied by sharp clear photographs: $15.00 for best paper; $10.00 for second best, and $1.00 additional for each photograph used.

For an illustrated system, practical for out-apiaries, that requires the minimum of labor: $15.00 for best paper; $10.00 for second best, and $1.00 additional for each photograph used.

All other material offered in competition and accepted will be paid for at a rate corresponding to the value of the plan.

Writers for these prizes must have their papers in the Gleanings office not later than Jan. 15.

For the best paper on beginners' work, success, and how accomplished, $10.00; for second best, $5.00.

INSPECTOR W. D. WRIGHT

A Brief Glimpse of the Home and Apiaries of a Successful New York Beekeeper and State Inspector

By R. F. Holtermann

Among the many apiarian shining lights in New York State, W. D. Wright readily takes a place. He has been one of the four state inspectors since 1900, and has proved himself very efficient in this work. He is a man who does well and thoroly whatever he undertakes, and the neatness and order shown about his apiary and home can scarcely be excelled. I visited his home in company with Chas. E. Stewart, another of New York's most efficient inspectors, who had most kindly offered to pilot me about. I want to say that I have had abundant testimony from widely scattered sources, that it has been a splendid thing for New York to have these four good men hold office so long. Being practical beekeepers themselves they have secured the confidence and good will of the beekeepers, by reason of the wise counsel they are able to give.

MR. WRIGHT AS A BEEKEEPER.

Mr. Wright has been keeping bees since 1866, beginning with his first colony at the age of fourteen. From then until the present time he has run each season from one to about 500 colonies. His bees are practically all Italians, but he does not care for the golden Italians. Like Mr. Stewart, he does no fall feeding except by giving combs of honey from the supers above. In addition to his duties as inspector he has been running two apiaries.

WINTERING.

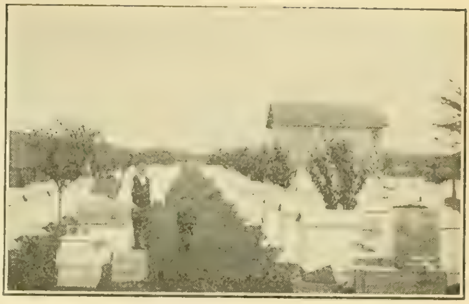
The bees are wintered in a cellar. At one time he used a bee-house above ground, and wintered successfully in that way. However, the wall packing of the bee-house gave out by rotting down, as is so often the case, so that toward spring it required a great deal of careful attention. Mr. Wright has since resorted to cellar wintering.

He sets out the bees about April 1, the exact time depending upon the weather. The setting-out process is sometimes spread over a week, he finding, what my experience amply endorses, that by setting out a portion when the bees become restless the bee-house or cellar is relieved and the remaining bees quiet down.

The bees are first examined for honey and queens. If the hive is fairly heavy it is taken for granted that the stores are

Part of the home apiary of W. D. Wright, Altamont, N. Y. Mr. Wright has been a successful beekeeper since 1866, when, at fourteen years of age, he bought his first bees. He has often had as many as 500 colonies.

Mr. Wright's residence.



The apiary in 1880, showing the hives in Manum winter cases that were being used at that time.

sufficient. Again, as soon as any brood is seen, capped or otherwise, it is taken as proof that the queen is there. The queens' wings are clipped on one or both sides.

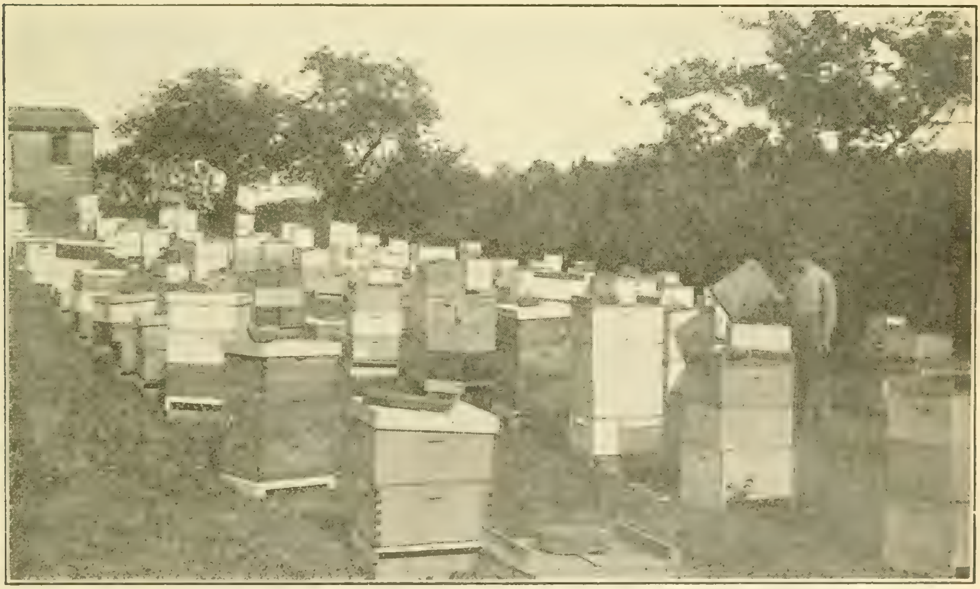
THE PREVENTION OF SWARMING.

Mr. Wright is a strong believer in shade, ventilation, and room given in time, for the prevention of swarming. The shade may be natural or artificial, the latter by means of shade-boards. He does not examine for queen-cells in connection with the swarming impulse, but finds it safer to have some one watch the apiary during that part of the season when there is danger of swarms issuing.

Extracted honey is raised exclusively, and the extracting is done at the close of the white-honey flow, and again at the close of the dark flow. He generally uses a bee-escape board for the removal of the surplus, two or three supers of which are tiered up. I might mention here that as supers are required Mr. Wright places the empty one on top.

When asked if old combs are a detriment to a colony he replied, "They may become so thru age, but combs can be used a good many years without injury to the colony."

Brantford, Ont.



The out-apiary at Knox. Mr. Wright produces extracted honey exclusively as shown by the tiered up extracting supers on the hives.

QUEEN - REARING TROUBLES

Some of the Reasons why Queen-breeders all over the Country were Unable to Fill Orders Promptly

Continued from last issue, page 836.

IN the last two or three years the beekeepers of the United States and Canada have been greatly interested in the possibilities of combless packages. Beekeepers in the North have used them in building up weak colonies, making increase, and have even gone so far as to consider the possibilities of sulphuring their bees in the fall and replacing them with one-pound or two-pound packages in the spring. Judging from the way the queen-breeders and other beekeepers in the South have been flooded with orders, they have evidently found it profitable. These queen-breeders and beekeepers in the South, and even a few in some localities further north, seeing all this business, have gone to selling bees in the same eager way that the northern men have been buying them. They look at a package of bees at a dollar or a dollar and twenty-five cents per pound, and have visions of what their bank account will be after they have been in the business for a year or two. The Penn Company, at Penn, Mississippi, have been in this business for several years, and believe they have the experience and business ability to make it profitable if any one can. As to whether they did or did not succeed in the business may be shown by this statement of their bee and queen business for the last season.

RECEIPTS.

4945	queens sold and shipped by mail...	$2733.69
1617	queens sent out in packages.......	1131.90
1638	packages and nuclei sold..........	2644.40
44	colonies sold	434.09
		$6944.08

DISBURSEMENTS.

Sugar used in feeding colonies and nuclei	$1500.00
Team and truck expense, including cost of gasoline, oil, repair bills, etc......	600.00
Cost cages for queens and packages......	400 00
Advertising in journals	210.00
Bees and queens bought from other sources to supply in above sales...........	1050.00
Wages and board for help in operating...	1500.00
Losses in transit.....................	580.00
Office help charged against this part of business to operate	300.00
Bees bought in colonies to offset sale of 44 colonies	220.00
Interest on investment	240.00
Depreciation and maintainance	300.00
Incidental expenses, etc...............	200.00
	$7100.00
Total loss on operation and sales........	$ 155.92

In the first place, the statement shows sales amounting to $6944.08, and a total operating and overhead expense of $7100.00. The company, therefore, had a total loss of $155.92. If the season had been more favorable there would have been more bees to shake, and that would have increased the profits to a certain extent. Also, owing to a bad spring the sugar-bill was probably twice as much as it would have been in a more favorable year. The item of team and trucking expense may seem a little high, but is correct. The cost of cages and packages is low, as they are made in the company's own factory. The advertising bill is not excessive. The bees and queens purchased were to satisfy customers whose orders could not be filled at once. Very little profit was made there. The $1500 item of "wages and board for help" will probably be increased next year. The $580 was refunded on orders that could not be refilled. The interest charge of $240.00 is 8 per cent on a $3000 investment. Depreciation and maintainance is figured at 10 per cent. The item of incidental expenses, $200, includes stationery, stamps, smokers, veils, etc.

It is admitted that this was a very hard year as to weather conditions and the amount of feeding that had to be done. There was a great deal of complaint from purchasers of bees concerning delays in shipment and losses in transit. The delays in shipment were due not so much to overbooking as to poor breeding conditions. The fact is that a great many bees in the South dwindled and actually died of starvation last spring. Those breeders who did produce any bees at all had to force their bees artificially with sugar. As to the losses in transit, and poor condition on arrival, especially this year, there have been a number of suggested explanations such as the age of the bees, uneven weather conditions, bees excited by excessive robbing while being shaken, and the bees being raised on sugar. The weather undoubtedly had something to do with it. The "old bee" explanation is hardly plausible; for when a colony is deprived of practically all its working force, and again the same thing repeated in ten days or two weeks, the latter drawing can have but few old bees in it.

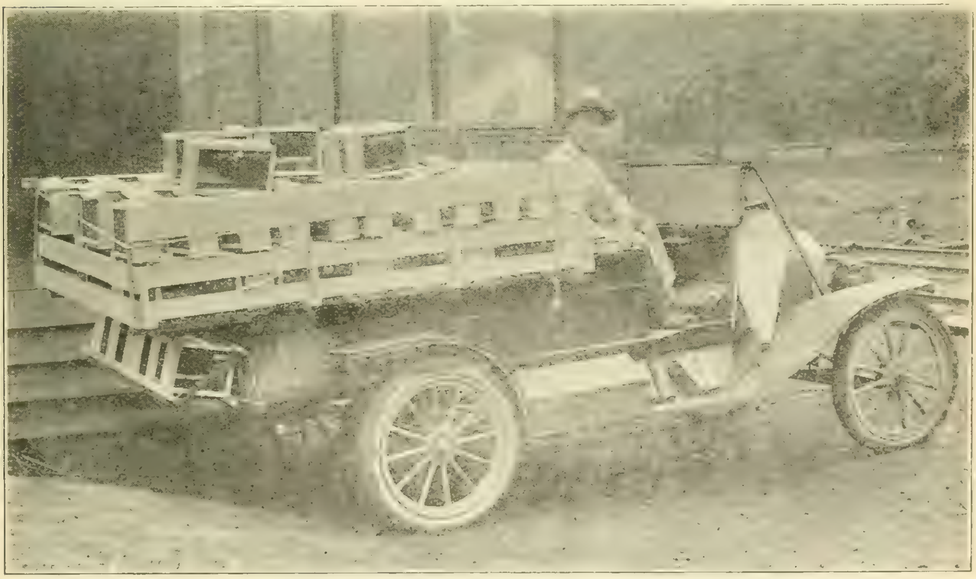
Robbers will account for some of the loss. It may be possible that bees, while able to live on sugar when mature, lack vitality when fed on sugar in the larval stage.

A good day's work ready for hauling to the station.

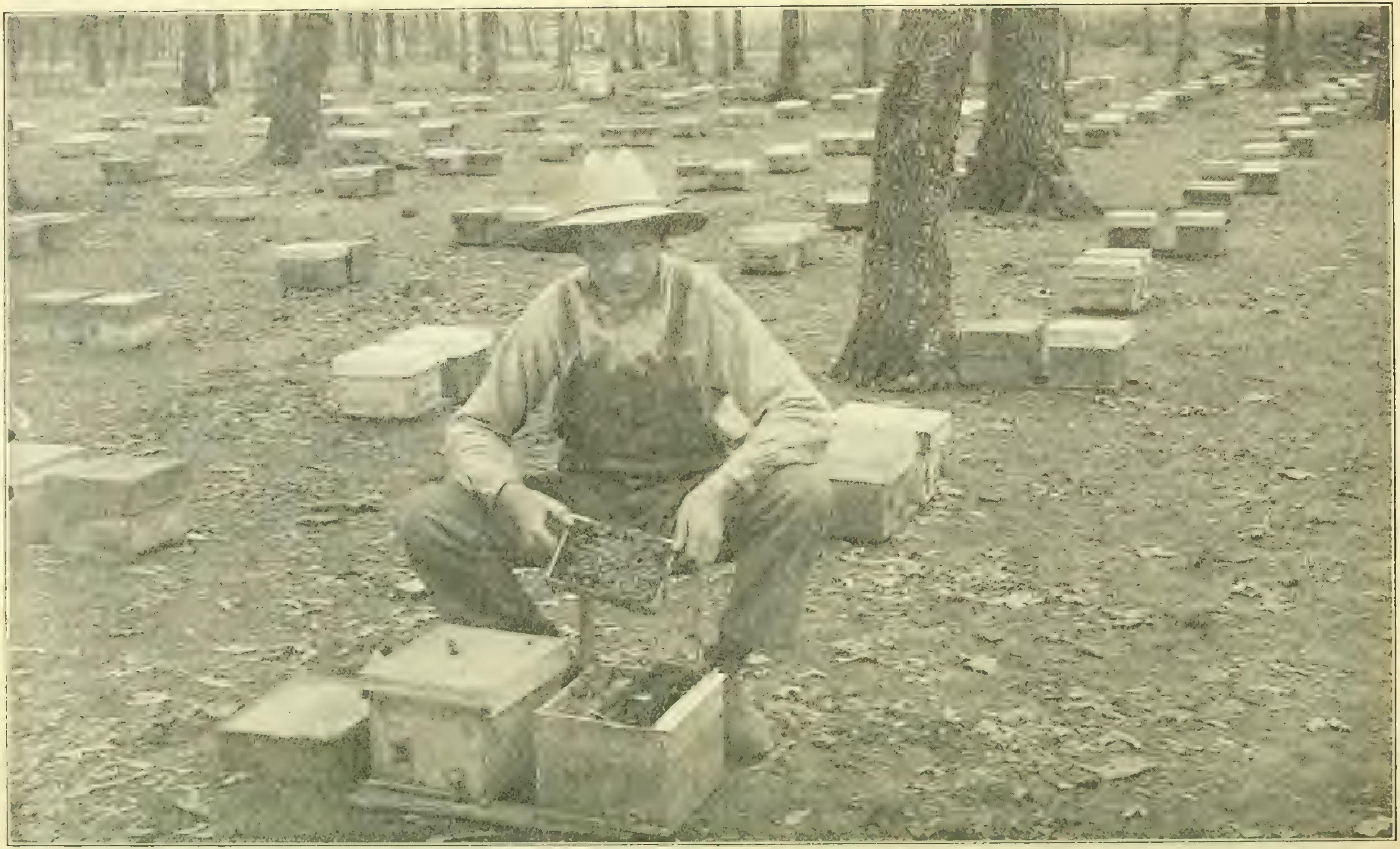
There will be a big demand for package bees for next year. In fact, most of the breeders already have inquiries for almost all the business they can handle for the coming year. It is certain that no bookings will be made at last year's prices. Owing to the attractive price that honey is bringing, undoubtedly some of the package men will go out of the package business. This condition, together with the increased demand, and the fact that the breeder's profits ran short this season, will raise the price of bees twenty-five to fifty per cent for next year. E. A. Harris.

Penn, Miss.

[Some, perhaps, in studying the figures presented by our correspondent will be inclined to think that at least one of the items in the list of expenses is too high—the $300 for depreciation and maintenance for example. However, depreciation goes on day after day and year after year. If a certain percentage on the investment is not set aside every year, when an entirely new equipment becomes necessary there will be nothing on hand with which to meet the bill. More than one business has been wrecked by the ignoring of this one thing—the maintenance of equipment, and beekeepers who are not taking this item of ex-



For a queen-breeder the jitney is indispensable.



General view of a twin-nucleus queen-mating yard belonging to the Penn Co., Penn, Miss. Another view of this yard is shown on the cover of this issue.

pense into consideration will have a sad day of reckoning later on. We do not consider the expenses figured too high. The following articles show something of the extra work entailed this last season.—Ed.]

DRONES KILLED OFF IN MID-SUMMER.

After spending over a quarter of a century in the queen-rearing business I find that to name all the difficulties over which we have no control would be about impossible.

Texas is called a land of sunshine and flowers, and so it is if weather conditions are favorable. But how often is our sunshine dimmed by a dark cloud from the east that hangs over our little nucleus yards till nearly every ray of hope is blasted and all our work brought to naught! About this time orders are piling up, and beekeepers are kicking because of delayed shipments. Finally the clouds roll away and the sun shines once more, finding us weeks or perhaps a month late on orders.

By this time the correspondence is excessive; and as all of our day time is taken up with the bees, we send as many replies as possible at night. When daylight comes again there are a thousand things to be done—cages to prepare, crates to make, nuclei to make, and cells to care for.

As we have several hundred nice virgins ready to mate, we anxiously await a still, fair afternoon such that the young queens can take their flight; but, alas! the south wind is blowing, and for days and weeks it will continue to blow. Last April we had but very few queens mated, as the wind blew a perfect gale nearly the entire month.

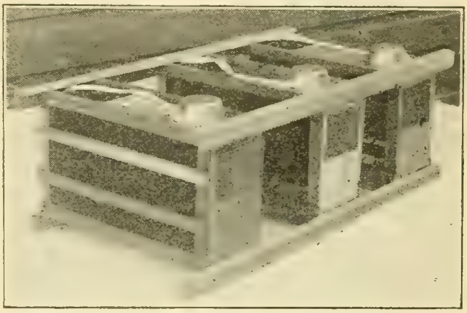
Along in May we began to fill orders pretty fast, but were soon hopelessly behind. About the middle of May the drouth struck us; in fact, it struck us a year before then; but it was only last May that we began to feel it seriously. It continued to grow steadily worse. The flowers ceased to bloom—no nectar, no pollen—bees loafing around the entrances of the hives like a lot of drummers waiting for a belated train—nothing to do but wait.

Finally I noticed the bees killing the drones, and was, therefore, obliged to make my drone colonies queenless to save the drones. The queens almost ceased laying, the colonies weakened, while the nuclei swarmed and all mixed together. As the bees gradually consumed the little stores they had, they grew daily weaker and weaker until we were compelled to resort to feeding.

To sum it all up, unfavorable weather was the main cause of our difficulty in queen-rearing. Plenty of good queens at the right time would stop 75 per cent of the complaints. The bee-shipper is depending on the queen-breeder for queens to go with his packages. The queen-breeder is unable to supply him, hence his customers are impatient over the delay. With efficient help, still clear days, and with nectar-yielding flowers, the honest industrious queen-breeder can turn all the frowns to smiles.

The man who embarks in the queen-rearing business to get rich quick will find himself floating around in the wrong canoe before he sails very far. Some years ago I made up my mind to quit commercial queen-rearing and go into honey production. But one year was all I could stand, for I had a lingering love for my old job, and the next spring found me back in the queen business. C. B. Bankston.

Buffalo, Tex.



Three packages of bees cleated together for shipment.

DISCOURAGING SEASON FOLLOWED BY SURPLUS HONEY-FLOW FROM CORN.

The season just closing has been, for southern beekeepers, most peculiar as well as difficult. Our colonies at the beginning of last winter were heavy with stores and fairly strong in bees. In our locality queens cease laying about Nov. 15 and begin again in January. As a rule, our coldest weather comes in February. Last winter we had no extremely cold weather, and February 15 saw our two-story ten-frame hives overflowing with bees, just at the swarming - point. Four-frame nuclei, of which we winter several hundred, were in the same condition. We could easily have disposed of a hundred pounds of bees without missing them.

Everything seemed favorable for an early spring. Willows, oaks, and fruit-trees began to bloom. Then the weather turned cold, with chilling winds from the northwest; bees leaving their hives were so chilled they could not return, and vast numbers were lost. April 15, at the opening flow from white clover, colonies contained less than half the working force they had in February, and were on the verge of starvation. There would be a few days of warm weather, when bees would work vigorously; then cold northwest winds would stop everything. Such being our weather conditions till the last of May, queen-rearing was, to say the least, most discouraging.

June 1 the bloom from white clover was almost over, and the bees had gotten but little more than a living. Then the first week in June we had a honey-flow that surprised us when we learned the source—corn! Usually when corn begins to tassel, bees work busily gathering quantities of pollen and a little honey; but they have never gathered to any appreciable extent until this year. The honey was light amber, of a good flavor, while the honey that we had previously thought came from corn was dark and of strong flavor. The flow continued for a month or more. Cornfields swarmed with bees—a sight such as we never before witnessed. Extracting supers were filled in a short time; also some fine comb honey was obtained. Colonies that were in good condition averaged a hundred pounds from this source alone.

After June 1 our season changed from dry and cold to dry and hot weather. Bees were busy all the time, and queen-rearing was carried on under most favorable conditions. Bees are still storing from heartsease (Oct. 10), which has given us a fine flow. Goldenrod is just opening, and in another week aster will be plentiful, so the bees will again go into winter quarters with plenty of stores. Even nuclei will not have to be helped in the matter of winter stores. Altho the conditions since June 1 have been so satisfactory, it is safe to say beekeepers in the South hope never to experience another such season as we had the first six months of 1917.

Loreauville, La. F. E. Shaw.

WEATHER CHANGES WHENEVER THE WIND CHANGES.

Our spring weather is very uncertain. We have cold snaps all thru March and April; in fact, the weather changes every time the wind does. Some years ago I sent a queen advertisement to Gleanings, and along came the orders before any queens were ready. When I wrote that the queens were not ready, my prospective customers said I should not advertise queens until I had them, so since then I have always advertised the date on which I expect to have the queens ready.

If we have any honey-flow here it is in May and June, and not later than the 10th of July; then no more until about Sept. 20. However, good queens can be reared by feeding until about the first of September when the nights begin to get too cool. But there is no month in the year here when we are not likely to have a few days of rainy weather that will keep the bees in. Then when the sun does come out, everything is in an uproar, and the young queens get lost in one way or another.

I think customers make a mistake sometimes in demanding that the queens or bees be sent by return mail or the money returned. I have had such demands when I could have filled the order in three or four days; but in order not to lose this customer it certainly would be wrong to rush thru his shipment and let others wait still longer. In fact, I have sometimes returned such orders when I could have filled them in the same time, for I think that, in this matter, breeders should do as requested by customers; but I also believe that customers should give a few days for filling an order, and not risk sending to another and finding him also behind in his shipments.

Randleman, N. C. D. T. Gaster.

DAYTIME, NIGHTTIME, ALL THE TIME.

Two unusual things occurred to the package-shippers and queen-breeders the past season—namely, great demand for bees and queens, and peculiarly unfavorable weather everywhere all the season.

The increased demand and the soaring price of honey, together with the government's slogan, "a hundred million more honey," caused beekeepers to order bees and queens as they never did before. It seemed as if everybody sent in an order for bees and queens, and, not being prepared for such a demand, many breeders after working hard all day had to sit up half the night returning orders they could not possibly fill. All that could be done was to accept such orders as there was a possibility of being able to fill on time.

Then another unusual thing occurred—the early spring weather looked for did not come; and all thru the summer there was more or less unfavorable weather, with a heavy loss in virgin queens and a consequent delay in filling orders booked. It seemed as if the weather was the cause of the failure to realize the "hundred million more of honey;" and what proves unfavorable to honey production is doubly so to the queen-breeder, as every breeder in the land can tell from the past season's experience. It will be necessary to exercise charity on both sides until the trade adjusts itself to the unusual conditions so suddenly thrust upon us.

The above facts suggest, as a possible remedy, that package-shippers and queen-breeders prepare for an increased trade in 1918, and accept no more orders than they can be reasonably sure of filling on time. (Better refuse an order than not to be able to fill it on time.) Also that persons desiring bees and queens book orders in advance so breeders may anticipate the wants of patrons and plan to meet them on time. It often happens that several beekeepers send the same time to the same man, and all want their orders at once. In a season like this, some will be disappointed, because that particular breeder may not be able to meet all those demands at the time desired; whereas by sending in advance of actual time needed it would enable the breeder to know if he could or could not fill the order, and would give sufficient time to notify the purchaser so he could arrange his plans accordingly, and neither one be disappointed.

Rockton, Pa. J. B. HOLLOPETER.

IT IS HARD TO PLEASE EVERYBODY.

The past season has been the worst for queen-rearing that I have ever experienced since I have been in the business, and some orders were consequently delayed. I believe that beekeepers are the most kind and agreeable people to deal with in the country. But in spite of this it is hard to please the whole world. Both breeder and buyer have been disappointed. The process of turning out young queens is not as rapid as thrashing buckwheat. It takes at least 25 days from the graft to get a laying queen; and if two weeks of bad weather occur, all is lost.

This year I could get the bees to accept the cells without any trouble; but when the cells were from six to nine days old. the bees would destroy them. I had the bees cut down queen-cells and pull out queens, which I later found on the bottom-board, alive, well developed, and with wings. There were 18 young queens lost in this way, and I was 25 days behind again. I then received orders saying, "Send queen by return mail or return money." I was doing everything possible, working night and day, to get the queens mated and laying for my customers; but the one thing necessary was time. I could not hurry matters. Of course if one sets a hen, and the eggs get chilled and won't hatch, he is obliged to set her again to get young chickens. The case of queen-rearing is parallel.

I should also like to call attention to the fact that not every buyer knows how to use a queen when he gets her. I have the following illustrations: First, "I received your queen and I took my hatchet and knocked the head off the 'gum,' and I put in your queen, and the next day I found your queen dead on the ground. This is my luck with her." Second, "Send me by return mail one of your queens and half a dozen bees to match. I want to get a start in this way." Third, "I see you have bees for sale; please send me your price of a queen and a drone. I want to get a pair to start from you."

My customers have been very patient during the delays, and I hope next year's queen-rearing will be more pleasant than the past. HENRY S. BOHON.

Roanoke, Va.

EVERY ONE WANTS ITALIANS.

The past year has demonstrated the fact that the black bee has had her day, and that the beekeepers have decreed that the Italian is the only bee that will be tolerated. I base my opinion on the letters received, calling for Italian queens, and stating that they seem to be immune to foul brood.

I believe that queen-breeders never had a season equal to the past one, and that all of the best known have had all the business they could attend to.

We started the season thinking that we could care for all the orders received. But we found, even with our ever increasing facilities, the demand increasing, and, altho we reared more queens than ever before, we were unable to supply them and had to return the money to many who wished the queens by return mail. This was partly due to the rainy weather in the early spring, and unfavorable circumstances thru the entire season.

The season was nearly half over before we caught up with orders, and we commenced to breathe easier; but just then the rush came again, and we were kept hustling. We always try to send queens by return mail, but this season we were not always able to do so; yet we were surprised to see how cheerfully the average customer took it when the circumstances were explained to him.

The summer demonstrated the fact to us that beekeepers as a whole are very reasonable people, and we remember with much pleasure the many kind words received from them, and the very few complaints as they patiently waited their turn. The nice letters received after sending the queens make the queen business one of the most agreeable of occupations.

Another reason for increased orders is that the beekeepers found that, with the greater demand and higher price of honey, it did not pay them to rear queens at a dollar each; and as things are at present no one can rear queens at that price with profit unless he is equipped, and gives his special attention to that branch of the business. No queen-breeder should try to rear queens at a price so low that he cannot furnish the very best. I do not mean by this that it will be possible to have every queen turn out perfect; but I feel sure that any reputable breeder will replace any imperfect queen when he is convinced of the fact that she is defective.

Binghamton, N. Y. C. W. PHELPS.

RAINSTORMS MAKE IT IMPOSSIBLE TO SHIP ON SPECIFIED DAYS.

During the past season the demand for queens and for bees in packages was enormous. This was caused, I believe, by the very severe winter losses in the northern states and the greatly advanced price of all grades of honey. As a breeder and shipper of bees and queens exclusively for several years past, I will endeavor to explain some of the local conditions occurring, which may not be fully understood by northern customers.

During April, and very rarely May, we have rainstorms lasting from a day to several days, which makes it quite impossible to guarantee shipments on previously arranged dates. This, of course, is a hardship on the customer in the North, who perhaps drives several miles expecting his shipment on a certain train, only to be disappointed by its non-arrival. The breeder also is inconvenienced for he is put back on this as well as other orders.

The practice of shipping bees in the spring in light screen cages with no comb is now a fully established success, since it is safe from the transmission of disease. Some states have already passed laws allowing bees to be shipped in no other way.

My advice to the buyer is to be sure and not order his bees to arrive too early. When the bees start to whiten the combs along the top-bars it is a good time to have the packages arrive. This time can be determined in advance by keeping a record of several seasons; or if in a new locality, some local beekeeper can nearly always supply this information.

If one already has bees and can give each package one or more drawn combs (one with honey and a little brood is best), then fill in with full sheets of foundation, there is little chance for failure with package bees in April, May, and June. If put on foundation only, they should be fed for a few days. When ordering bees some time in advance it is best to state, as nearly as possible, the time delivery is desired. This gives the breeder a chance to hold this date open for that special order.

San Jose, Cal. J. E. WING.

THOSE AWFUL CHANGES OF TEMPERATURE.

For bee-raising and queen-rearing, this past season has been the most unfavorable one I have ever experienced. Altho I have been able to fill almost all of my orders, one man claims he could have used 100 or 200 more if he could have obtained them earlier. The rest of the orders have been filled, but with some delay and occasional complaints. However, so far as I know, all difficulties with my customers have been righted.

My main trouble for this season was sudden changes of temperature which raised havoc with queen-rearing. When the weather would warm up and I could get a fine lot of cells started, a change of temperature would occur, and the cells that were ready to hatch would have to be cut out and placed in nuclei where they often died in the cells. On the other hand, if a warm day or night followed the cell-cutting, and giving to nuclei, there resulted just as fine queens as could be found. This year the pound-package business has been the heaviest I have ever had; but I filled all orders except two. On account of the sudden changes of temperature, the fall flow was almost a total failure.

Jellico, Tenn. CURD WALKER.

DISCONTINUES SELLING BEES BY THE POUND.

This was the poorest season I ever passed thru in my life—at least since I was in business for myself; yet I know all queen-breeders had the same troubles. Well, I am getting on my feet again, and am already laying my plans for the coming year.

In general I am planning a policy of retrenchment. I expect to sell very few bees, if any, by the frame or pound, and I shall do very little advertising, having decided to increase my number of colonies instead.

Point Pleasant, Pa. H. W. FULMER.

[The foregoing articles together with those published in the last number show something of the real problems that the queen-breeder has been having to meet this past season. It is to be hoped that such a combination of conditions may not occur again—the increased demand for bees and queens and the unusually bad weather conditions. In all probability the demand will be just as keen next season. Here's hoping the weather may be ideal.—ED.]

DEMUTH'S PLAN OF WINTERING

Some Improvements on the General Plan Illustrated and Described on page 842, November Issue

By E. R. Root

SINCE our last issue we have been giving this general plan a great amount of study. We have called in our entire editorial staff as well as our Mr. Pritchard and his son, who raise so many queens. We asked Mr. Pritchard, who is a genius in making new fixings, to study out the problem of a cheap inner case for holding six or seven Langstroth frames on end. As a result of this study he brought into the editorial sanctum a nearly square long or deep box without ends, made of cheap thin lumber. In his opinion it is not necessary to have the more expensive case with a hinged lid of the kind illustrated and described on page 843 of our last issue; and he therefore made a plain box (as shown in the subjoined illustrations), of ⅜-inch stuff nailed at the four corners, without rabbets, and of such dimensions as would take in seven Langstroth frames, a bee-space deeper than the frames, and three inches longer. From his box the frames can be lifted out after being packed if need be. It may be necessary in the spring to substitute combs of stores for those that are empty.

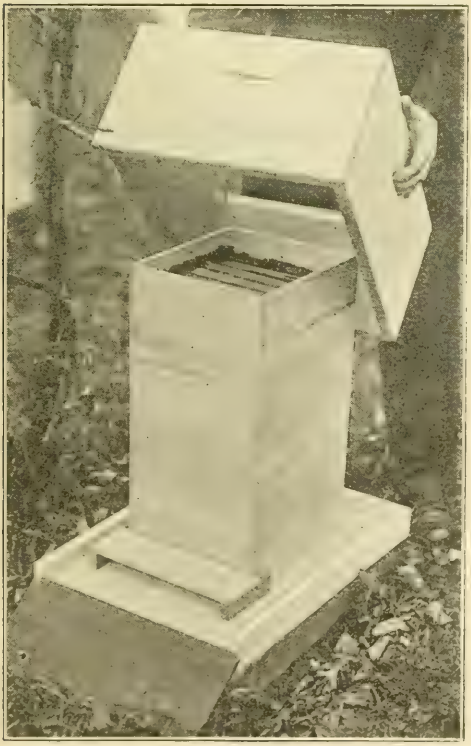


FIG. 1.—The Demuth inner case with the Pritchard improvement, just large enough to hold seven Langstroth frames on end, leaving 2 inches on top and one inch beneath. A bridge in front connects the inner with the outer entrance. It is placed centrally on the bottom-board when the regular summer equipment of supers is placed around as shown in Fig. 2.

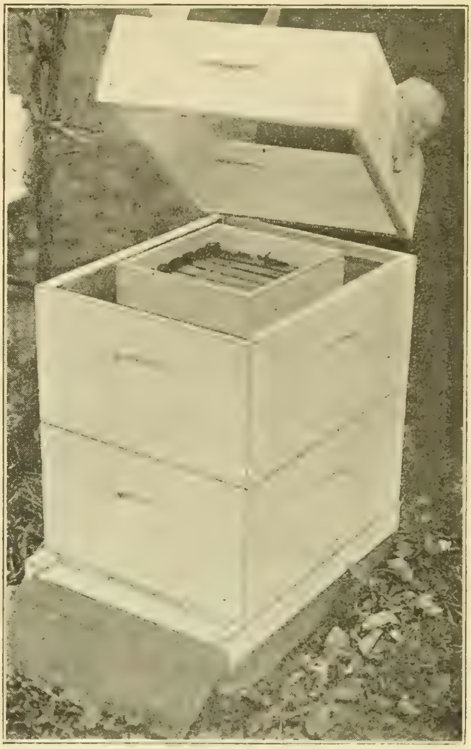


FIG. 2.—The new scheme of winter packing, using the regular equipment of hive-bodies and supers found in any beeyard. Two hive-bodies and one super or three hive-bodies make up the outer case.

A cleat running crosswise thru the center of the box, and one inch from the bottom, supports the seven frames when they are put up on end. A flat board cover, a piece of burlap, or two or three thicknesses of newspaper, cover the top, after which packing is poured over the whole, as shown in Fig. 3. A slot is cut in one side at the bottom for an inner entrance.

It will be found by measuring up the inside dimensions of a ten-frame hive that it is perfectly practicable to use either the seven or eight frame inner case. A seven-frame case provides ample packing room of two inches one way and three inches the other way, and will accommodate any ten-frame colony when contracted down for winter. Two regular ten-frame hive-bodies and a super will make up the outer case, as will be seen by the illustrations accompanying. Where one does not have upper stories, and runs exclusively for comb honey, he can use two supers in place of a hive-body, or three supers in all in connection with the regular brood-nest body; or if he produces extracted honey only, but has no shallow supers, he can use three regular hive-bodies.

Where one's hives are eight-frame he can still use this system of packing; but he will have to make the inner box hold only five frames in order to give sufficient packing space.

It will be noticed in Fig. 1 that we use a bridge to connect the inner entrance with the outer. The two end cleats forming this bridge should be long enough to project beyond the sides of the inner case. The purpose of these projections is to prevent the bridge from being shoved out of position when the packing is tamped down in between the inner and outer cases.

It will be noted, also, that we use planer shavings. In the great majority of cases the average beekeeper will find dry forest leaves more available. They are just as good provided they are well tamped.

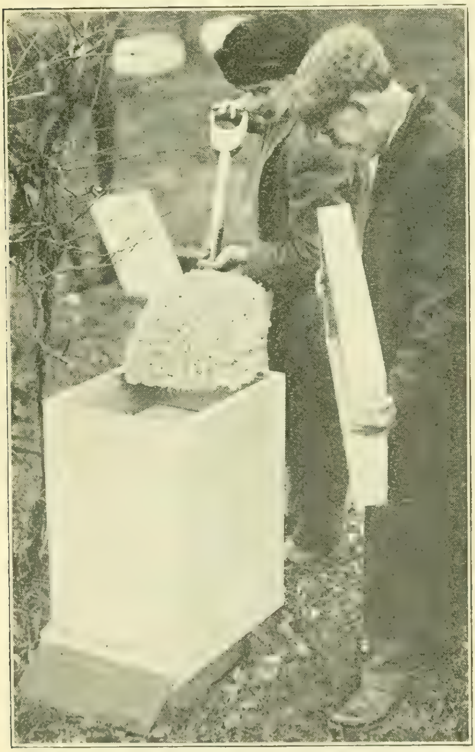


Fig. 3.—Pouring in the packing material after a flat board cover is placed on the inner case. The shavings are carefully tamped down when the regular hive-cover is put on top of the whole.

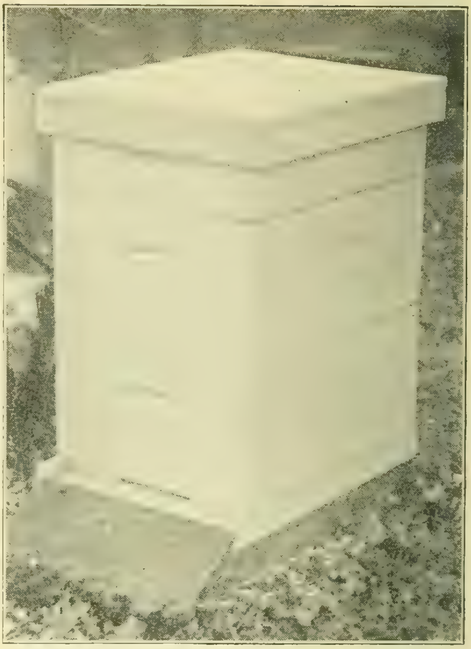


Fig. 4.—A Demuth winter-packed colony on seven Langstroth frames stood on end, spaced between the outer and inner walls 2 inches on the sides and 3 on the ends.

Fig. 5 shows how the frames are slid into the inner case. As explained, the case is made wider than the frames by a bee-space. When the bees are packed for winter, seven of the best combs are picked out—those containing most stores with some pollen. Two frames are taken out of the regular hive at a time, inverted, and slid in endwise like the drawer to a bureau, as shown in Fig. 5, the top-bars resting directly on one side of the case. Another set of frames are put in in exactly the same position they occupied in the brood-nest, and so on till the case is filled, care being taken to disturb the bees as little as possible. The frames are shoved clear up against the bottom cross-cleat previously mentioned, which is intended to support the weight of the frames across the middle of the end bars when the case is stood on end.

The object of having the bee-space between the bottom-bars and the side of the case is to provide clearance room so that the frames can be easily removed in the spring. At the top, one wide wedge between the bottom-bars and the side of the case holds the frames securely in position. Thus the top-bars come up against the side of the inner case. The bees may form propolis connections to the top-bars, if they are left in the case until warm weather. But no harm will be done, as the bee-space between the bottom-bars and the sides of the case makes it possible to break the propolis connections and remove the frames.

As shown in the previous issue, we provide two inches of space at the top and one inch at the bottom. The space above (see Figs. 1 and 2) is to receive a cake of candy or a feeder of syrup. When the winter nest is formed in the combs in their horizontal or summer position, it may be necessary to feed either candy or syrup after the frames are stood on end. The bees can then place the stores at what is now the top, and, if fed early enough, form a new winter nest. If it is too late, the cake of candy will provide food at the top.

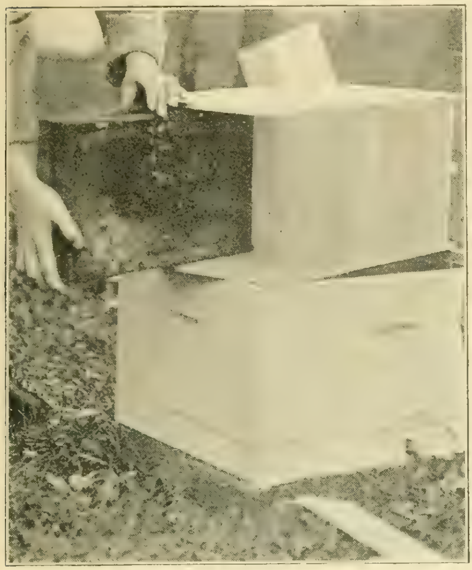


FIG. 5.—Method of inserting Langstroth frames in the Demuth-Pritchard case. Frames are put in upside down, two at a time. When the case is full of frames, just as they were in the summer hive, it is stood on end as shown in Figs. 1 and 2.

Some of the best wintering we ever had was when we wintered colonies on cakes of hard candy with no other stores.

To prevent the hive-bodies and supers forming the outer case from getting out of alignment or displaced during a high wind it would, perhaps, be advisable to connect them together at their two opposite corners by means of a double-pointed tack or crate staple. These would need to be driven in only part way so they could be easily removed in the spring.

The amount of packing material required in a seven-frame inner case, as here shown, and a ten-frame width of hive will be about 2½ bushels of planer shavings. If a three-story case is used, three bushels will be needed. In any case, the packing should not come higher than one inch from the top; and perhaps it would be well to put a cleat under the cover on the south side to allow for ventilation to carry away the moisture rising thru the packing.

Our whole editorial force looks upon this method of packing as exceedingly promising, especially our Mr. A. I. Root, who tried it out years ago. Langstroth did the same thing, and speaks of it approvingly in his writings. He must have believed in the principle or he would not have suggested this plan of standing his shallow frames on end in order to make them deep for wintering. This may have been one of the reasons that he adopted his shape of frame. At all events, the seven-on-end-frame plan puts the winter brood-nest in the form of a tall or deep cavity, very nearly square, instead of an oblong and flat space like the Langstroth hive.

It has been the general belief among expert beekeepers that a deep hive like the cavity of a bee-tree forms a more natural winter-clustering space. There is no use in denying the fact that the old-fashioned box hives, or the old log gums, practically a foot across, and two or more feet deep, would often winter bees exposed to outdoor weather conditions when bees in double-walled Langstroth hives would die. In the arrangement here shown we are going back to the deep-hive scheme for wintering, and yet for summer we have all the advantages of a shallow hive.

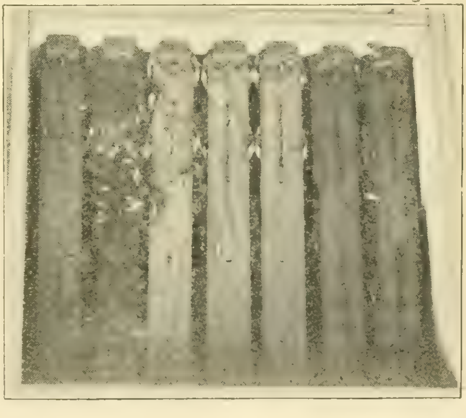


FIG. 6.—Looking down into the top of a Demuth inner case showing seven frames. The two-inch space on top is to give room for a block of hard candy, provided that the combs are a little short of stores.

GLEANINGS FROM THE NORTH, SOUTH, EAST, AND WEST

IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

Regarding the newspaper method of uniting, I find it will work well even when one colony has laying workers. Out of seven laying-worker colonies united with as many small colonies in early October, I lost only one queen.

EXTRA LARGE LOCAL MEETING.

The joint meeting of the Riverside and San Bernardino Co. Clubs, Nov. 1, was one of the best-attended and most profitable meetings that has ever been held in the southern part of the state. The attendance rivaled that of the annual state meet. Not only the members of those two clubs were present, but many from Orange, Los Angeles, and San Diego Counties, the special attraction being the presence of Dr. E. F. Phillips, with the addition of our secretary of the state beekeepers' association, Mr. M. C. Ritcher, as well as Prof. Geo. A. Coleman, of the University of California. Dr. Phillips was well received and appreciated. His quiet manner of speech, and his undoubted knowledge of disease, were both pleasing and convincing. His detailed description of both American and European foul brood, together with methods of treatment, met with marked attention by his auditors.

The announcement of Dr. E. F. Phillips, that there is to be a beekeeping advisor appointed for California, was received with hearty approval. All seem to think the recognition of California as a beekeeping country by the Department of Agriculture, as well as the assistance given by such an appointee, will be of great benefit.

Mr. J. D. Bixby, of the *Western Honeybee,* came out strongly for inspection of honey and conditions in the apiary. Mr. Bixby does some inspecting, and has a very good chance to observe some of the unsanitary conditions (I feel like saying rotten) that exist in some of our apiaries. I am with him heart and soul in this matter.

Prof. Coleman advocated selecting our best bees and breeding our own strain. In this I cannot altogether concur. There are well-known breeders that have spent a lifetime improving a strain, and have the added knowledge of successful breeding. Many of these are comparatively isolated, and are much more certain of success. In California, apiaries are remarkably close, with wild bees in many houses, holes, and trees, making the problem exceedingly difficult to handle. It is my opinion gained from experience that ten dollars spent for a breeding-queen is money well spent, and the results are apparent within so short a time that the time spent in trying to breed up a strain of your own is, to a great extent, time thrown away, especially where you have to contend with your neighbors as well as "no man's bees."

PRESENT DEMAND FOR SWEETS BEST MET BY A GOOD SUPPLY OF HONEY.

The crying need of the world today is sweets, sweets, not alone for ourselves, but for the world we are trying to feed while our enemies are being crushed. The best method of securing more sweets is the method we want. In my opinion there is no one thing that would add so much to the production as to sweep away all local and state ordinances, and substitute a federal inspection law. A government permit to move bees from one locality to another should be *prima facie* evidence of freedom from disease. This would allow bees to be transported to the orange-groves for the early flow, then to the alfalfa, bean, or buckwheat fields for an additional flow. As it is now, practically every county containing bees has its local ordinance, many of which exclude bees of any other county from being imported. Some discriminate against any county where there is disease within a given radius of the bees to be moved, the radius sometimes being placed at many miles. And, strange to say, some of the very counties that have such ordinances are said to have diseased colonies themselves that are closer to the coveted location than the given radius. California has disease. There is not a county in the state, unless it be very remote, that has not disease.

The object of various ordinances is a subterfuge to exclude migratory beekeepers rather than the great fear of disease. A federal inspector could soon acquire information that would give him all the knowledge needed to regulate the shipping of bees from one point to another. In the orange belt I may safely say that not one-tenth of the nectar secreted is gathered by the bees, for the reason that the flow is so great that many blossoms are never visited at all. In some localities it would doubtless be advisable to have the location of migratory bees supervised, to prevent an overcrowding in certain sections. But this could be arranged in some manner suitable to all. If the world's cry is for sweets, take down the fences and save all it is possible to secure.

IN TEXAS

F. B. Paddock, State Entomologist

AFTER passing thru the very trying and more or less disastrous season of 1917, it is of much interest to stop for a time and look around to determine the status of conditions to see how we stand and what is the next and best step for the future. As the season passed, with month after month of extremely unfavorable conditions, there have been many who feared for the outcome, and who have not had the courage to make this review of conditions.

Over the entire state the honey-plants have suffered greatly from the drouth, which has been the most severe for twenty-five years. Rains are needed badly now, and would do unlimited good if they would occur soon. In the extreme southern section of the state the fall honey-plants have bloomed nicely, the flow extending over the entire month of October. In the Gulf Coast section the honey-plants are in very poor condition; but some distance inland it is found that the mesquite is about normal, and the horsemint will develop if normal winter rains occur. In the southwest section the honey-plants are only about 50 per cent normal. In the creek bottoms the oak growth is in good condition; but away from these localities extreme drouth conditions prevail. In the western section the honey-plants, mesquite and catclaw, show the effect of the extreme prolonged drouth. In the irrigated areas the alfalfa is in normal condition. Thruout the central section the drouth has had a very marked effect on the honey-plants, causing a very short fall flow from broomweed. The very early frost on October 8, in the northeast section, prevented the cotton from yielding any fall flow, and the honey-yielding weeds were also severely injured by this freeze.

After considering the above remarks it is only natural to ask, "What is the condition of the bees? How are they going into the winter?" In the extreme southern section the bees entered the winter in excellent condition, having had a good late flow on which they built up well and also stored a good surplus of honey. In the Gulf Coast section the bees were in poor condition, especially to go into winter. However, further inland the bees had probably sufficient stores to carry them thru till spring. In the southwest section the bees were about 60 per cent normal and were in just fair condition for winter, being rather light on stores. In the western section those bees that have received attention will go thru the winter nicely. Owing to the short crop in this section many beekeepers have not given their bees proper attention, and many of such colonies will be lost before spring. Thru the central section the majority of the colonies are in only fair condition to enter the winter, being light on stores, not having received the attention that was demanded. With plenty of stores and young bees, the colonies of the northeast section are well prepared for winter.

With such an adverse year it is only to be expected that there would be a heavy loss of bees. However, reports do not indicate that this loss has been as heavy as was expected. There has been some loss in the Gulf Coast section; and thruout the southwest section, where conditions have been so severe, there is some loss, but not as much as was expected. In the western and the central sections there have already been some losses; but heavier losses will come before spring, due to inattention before going into winter. In the northeast section, at the end of the season there was an increase over last year of at least 40 per cent in the number of bees.

After a review of the conditions at the close of the season, and a summing-up of all the factors, what are the prospects for next year? It might be expected that the extremely adverse conditions of the past year would cause many to despair of the future. But the reports do not indicate that such is the case. Among the older and larger beekeepers there is a decided feeling that next year will be more favorable than for some years past. The smaller beekeeper and the beginner will be more than ready to discard all idea of beekeeping, many being now anxious to sell their holdings.

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Whatever honey is put on the market is readily taken up at a very good price. Very little honey has been handled in a wholesale way, the local market having been able to consume all that has been produced in any locality. Many inquiries have been received for carload lots, but there has been nothing offered.

Much favorable comment has been heard concerning the apiarian exhibit at the State Fair. In this unusually severe year we have had the best exhibit at the fair that has ever been presented to the people of the state. It is self-evident that much interest in honey is being created by this yearly exhibit. The interesting feature is that the exhibitors feel so well rewarded for their efforts in presenting their exhibit. More beekeepers should avail themselves of this opportunity of presenting their industry to the public.

* * *

There are those who can see some good resulting from every disaster, and this is particularly true among the beekeepers. The extremely severe season just passed will certainly result in the death of the colonies which are in any way affected with American foul brood. The diseased colonies of last summer died very early, and what stores might have been left in such hives could not have served long in the robber colony before it in turn died out; also any colonies that robbed weak diseased colonies in the fall will certainly have a poor chance to go thru the winter.

It is said that but few or no colonies of bees are now to be found in trees thruout the southwest section, where the season has been so severe. The absence of such bees will be a great help to the queen-breeder in particular and to all progressive beekeepers in general. If it is true that bees in trees harbor American foul brood, such a menace will be removed.

* * *

In the early fall it was discovered by the beekeepers in one of the southwestern counties that their bees were dying, and examination disclosed the fact that there were no stores in the hives. Many began at once to feed sugar syrup and artificial pollen. The results of this artificial feeding were very satisfactory. In many instances such action will mean the saving of an apiary.

NOTES FROM CANADA

J. L. Byer, Markham, Ont.

OUR thanks are due the author for a copy of the report of the state bee inspector, as well as the report of the Iowa State Beekeepers' Association, which together comprise a very neat and nicely bound little volume. Mr. Pellett is not only a capable and enthusiastic naturalist and beekeeper, but in addition is a splendid writer with the ability of putting his thoughts on paper in a manner that is interesting and instructive to all who have the privilege to read them. The report is well worth a place on any beekeeper's table; and, while especially fitted for latitudes similar to that of Iowa, it has much of interest to beekeepers in other places as well.

* * *

The question of taking all the honey away from the bees in the fall and buying bees from the South in the spring has been suggested in the past, yet very few have seriously considered the proposition, as it looked too risky from a financial standpoint. Also to allow so many bees to perish does not look like good business, to say nothing of the humane aspect of the matter. I have never had any idea that it would pay, because of the great number of risks that would have to be taken into account, such as being able to get the bees when wanted, etc. But if there ever was a time when the plan looked at all feasible from a financial standpoint, that time is right now, *provided*, of course, that the bees can be bought in the spring at last season's prices (another chance). Talk about the cost of wintering stock on the farm! Why, a little calculation will show that the beekeeper will spend more in wintering his bees than many farmers ever thought of spending on their live stock. Take our own case, which is only typical of hundreds of others. With over 700 colonies in winter quarters, and colonies averaging at least 35 pounds of stores each, quite a nice sum could be put in the bank if all that honey were extracted and sold at present prices—a sum, by the way, which a few years ago (before the buying power of the dollar decreased 50 per cent) would have looked almost large enough for humble mortals like yours truly to retire on.

* * *

OUTDOORS VS. INDOORS.

So the editor of GLEANINGS is inclined to think that it is colder in Illinois than here in Ontario, page 854, November. Well, all that I can say is that if he will come here in the very coldest time, instead of coming as he did last in the very *wettest* time, perhaps he will change his opinions. I don't know how much wind they have around Borodino, N. Y., nor yet around Marengo, Ill.; but I do know that since the bush has about all been cut down in our locality we get *enough* wind to suit us, both as to continuity and also velocity. As to the New York locality with its many hills, one would naturally think that the wind would be less noticeable than on level stretches. In regard to the Illinois location, I have little idea what it is, except that it is a wonderful place for big crops of honey when the bees are managed by one of the most wonderful beekeepers to whom we are all proud to do homage.

I hope Dr. Miller will notice that I advised no one to change his system of wintering, but merely stated that I did not believe there was the big difference in the two systems that some writers claimed. If I lived in Illinois I am not sure which system I would use; but I am quite certain that I would give the outdoor plan a good trial anyway. It would be the rankest presumption on my part to suggest any changes in Dr. Miller's ideas whereby he might winter successfully outdoors; but he will pardon me for pointing out to him two things at least that are against success. He uses eight-frame L. hives, I believe, and is opposed to feeding the bees in the fall, preferring to give them combs of honey as needed, to make up any deficiency. For wintering, here in Ontario, the eight-frame L. hive is the most uncertain proposition under the sun, unless heavy feeding is done in the fall. Putting combs of honey in the place of partly filled ones will not work nearly as well. More or less brood in the hive till quite late makes this work of replacing combs correspondingly late, and disarranges the brood-nest to the detriment of the bees. Light colonies fed heavily, and allowed to arrange the stores as they see fit, seems to work much better. But, if eight-frame hives were well protected and made nearly solid with honey by the middle of October, I feel sure that, regardless of the wind, they would winter *fine,* even at Marengo.

* * *

During last week in October I wrote to a friend in Pennsylvania asking him to send me a queen to replace an undesirable one I had found a few days before. The reply came at once that they had already had a fall of twelve inches of snow. While, no doubt, this fall of the beautiful would not stay with them very long, yet it seemed rather strange that we in the North had no snow at that date. My correspondent stated that the weather had been unusually cool, so it looks as tho conditions have been much the same thru all the northern zone.

* * *

Fall weather conditions continue to be much colder than the average. In our locality the bees have had no real flight since early in October. No harm has been done by this enforced quietness on the part of the bees, but naturally we are hoping for a real good cleansing flight before actual winter conditions set in.

FLORIDA SUNSHINE

E. G. Baldwin, Deland, Fla.

AN inquiry has just come from a beeman living in Oak Hill, Fla., asking whether it is advisable to heat extracted honey when bottling or putting it in glass jars, etc. As several similar inquiries have come lately, appertaining to the same matter, it will not be out of place to make a brief reply here.

The novice should never heat honey to boiling, and not over 140 degrees Fahr. The expert may heat higher, with care; but this seems to be the limit of ordinary safety. The heating should always be done with a double-cased heater, which the small beeman may easily make by taking any copper or tin pan or boiler and setting it into one slightly larger. There should be at least a thirty-second of an inch of water all around the outside of the inner vessel, and more will not hurt. Be sure the water in the outer vessel rises as high as the honey in the inner one; and do all the heating with an accurate thermometer in the honey all the time. Do not use a galvanized-iron vessel for the honey, as the slight acid in the honey will attack galvanized ware quicker under heat than when cold, and will have a slightly dark mark on the inside of the vessel, showing that some metal properties have been assailed and liberated into the honey by the acid. Tin is all right, but not iron nor galvanized iron. If the heating is done gradually, and the honey covered so far as possible, it will be better.

Why heat at all? the inquirer asks. Because after heating, and sealing while hot, the honey will remain liquid longer—that is, will not granulate so quickly under changing temperatures. We have found that it is well to place the honey in the vessels it is to be sold in; set these filled cans, bottles, or jars, right into the cold water, and heat all to the temperature named above. Put on the caps or lids while the honey is hot; remove, and let cool slowly in a place slightly warmer than the surrounding air. Then wipe the cans clean; label, and keep in as even a temperature as possible till sold. Do not stir the honey any more than can be helped and do not expose it to the air more than is necessary, for in so doing one might easily lose the fine aroma of the honey, since the aroma is very volatile, and evaporates easily. Overheated honey is not honey. It is not even good molasses.

In selling honey to local markets, near home, we have always found it a good plan to assure the dealers that any honey which granulates on their hands will be replaced by liquid honey or else will be removed and reliquefied free of charge—in other words, that we will keep the honey on their shelves in a liquid state. We find that the southern honeys do not as a rule candy as hard as many of those from further north, and are, therefore, not as well liked in the granulated state as those honeys that become solid. Most customers like our Florida honey best in the liquid form.

THE DIXIE BEE

Grace Allen, Nashville, Tenn.

NEWS has reached me from Bowling Green, Kentucky, of the formation of the Warren County Beekeepers' Association, with O. L. Cunningham as president. There is also a vice-president, a secretary-treasurer, and four directors. Good luck to you, Warren County!

* * *

All the discussion about sealed covers versus absorbents interests me greatly. We have never used anything but sealed covers. Spring after spring finds combs in the hives so moldy that even the bees, skillful and thrifty tho they are, destroy them rather than try to repair them. Many of the arguments for both sealed covers and absorbents have the ring of conviction that comes apparently from success with the preferred method. Will locality account for all this varying experience? What makes the difference between different hives in the same yard? I wonder if considerable unsealed stores makes a difference in the amount of moisture that condenses in the hive. I have seen water coming out of the entrances in winter, and have run a long slender stick in several hives, and had it come out from some wet all over, and from others dry. This fall I have removed a few super covers, leaving only burlap between the bees and the super of leaves, with sticks under the burlap.

* * *

We had no trouble getting three hundred pounds of sugar at $8.75; but when I decided we would need another hundred I was told of orders not to sell more than twenty pounds to a customer. This was a very recent order, however, and the grocer knew I wasn't buying it to store away; and so when I told him how Washington had sent out letters to beekeepers, urging especial care in putting bees into winter quarters, to help get a record crop next year. he sent me the other hundred at $8.80, which put our little yard in pretty good shape as to stores.

Trying out the situation in regard to buying soiled or "salvage" sugar, for feed, Mr. Allen visited several wholesale grocers one day this week, without success. One of them said that the little they had that spilled out or got rained on or otherwise met mishap was sold at a low price to the negroes helping around the store. They dried it, he said, or sifted it, etc., and were always glad to get it for use at home. "No salvage sugar for our Italians," Mr. Allen reported that night; "it all goes to the blacks."

* * *

THE CLOSE OF THE YEAR 1917

Dying, at last, this terrible year,
  This tragic and terrible year.
And children in far-off peaceful days
Shall look from their books in startled amaze
To say, "But, Mother, are these things true?
Did children like us and mothers like you
Starve? And did death drop down from the sky?
Did millions and millions of fathers die,
  That terrible year?"

Dying, today, this glorious year,
  This stirring and glorious year.
And the youth of a fairer juster day,
With proud exulting eyes, shall say,
"They rose, my peaceable people, at length!
Quietly rose in their ancient strength;
With hearts aflame and flags unfurled
They marched to make a safer world,
  That glorious year!"

Dying, so soon, this beautiful year,
  This fleeting, beautiful year.
In times to come if people shall say,
"There was nothing desirable, day after day"
Oh! I shall be a voice that sings,
"Bees with gay adventurous wings
Hummed and hummed! spring brought flowers
And dawns and dreams and sun-lit hours
  That beautiful year!"

That beautiful, terrible, glorious year—
That strange bewildering year!

* * *

We are quite an experiment station this fall. All hives have contracted entrances. There are hives with no other winter attention; hives with supers of leaves only, with supers of leaves and paper wrappings, with supers of leaves and contracted brood-chambers; one-story hives and two-story hives; hives moved over into an abandoned scratching shed, protected on the north and west; hives packed in single boxes with plenty of leaves around; and one quadruple case made at the mill. This case, delivered in the flat, to be put up with bolts, cost $6.50, while the roofing paper for the cover cost 83 cts., making $7.33. Probably the paint will bring it to about $8.00, a packing price of $2.00 per hive. Ten pounds of honey from each colony, over what it would have stored without the protection, will pay for the case.

Mr. Editor, on page 831, November, you mention the advantage of reducing a ten-frame colony to six or eight combs, and packing both sides of the brood-chamber. Does this advantage apply only to double-walled hives? Would not the same principle hold in single walls? I happen to have done that once to a rather weak colony, putting a cushion of leaves outside each division-board, and adding a super of leaves on top. The little colony came out booming—with no moldy combs. But they tell me that the thermometer tests at Washington prove it to have been just exactly as good as no packing at all.

AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado

AT this writing, Nov. 1, preparations are being made by many beekeepers to pack their colonies in winter cases. Some have already completed their packing, while others have just begun. A late open fall has given ample time for making the cases and putting the bees into them.

ALMOST ALL THE HONEY SOLD.

The price of honey has held up better than expected, and there has been a steady advance. White extracted has been sold at 14½ cents in carlots, and little doubt is felt that this will advance another cent before January 1.

Comb honey has been about all cleaned up, the last carlots going at $4.00 a case for the fancy, $3.85 for No. 1 and $3.70 for No. 2, f. o. b. western Colorado. Comb honey is selling in case lots at $4.25 to $4.75; extracted honey in case lots at 15 to 18 cents a pound.

There are not more than five or six carloads of extracted honey unsold in the producers' hands, and the writer does not know of any carlots of comb honey unsold. People will either pay more for honey after January 1 or they will go without.

The high price of honey has already had a stimulating effect upon the price of bees. Apiaries well located are in good demand at high prices. Extracted honey will be more largely produced another year, and it now appears as tho comb honey might almost become a thing of the past, even in Colorado, where comb honey has had such popularity.

SAVING BEES OR BUYING THEM.

The package business has been a uniform success wherever tried; but the difficulty has been in getting the bees delivered. So far, half to two-thirds of the bees shipped into Colorado in packages have arrived dead or in a smothered condition.

My opinion is that winter packing will largely take the place of shipping bees in packages. If we would only save what bees we have in the fall and bring them thru strong in the spring, we should not need to ship in packages. The winter packing is much the cheaper way.

THOSE WHO HAVE GONE TO THE FRONT.

The beekeepers of Colorado, no less than those of other states, are having their younger members taken by the draft. This is a matter that should have our careful attention. Our young beekeepers are having to close out their business at a great loss, and we as a fraternity of beekeepers should devise a means of helping such soldier beekeepers.

Why cannot the Colorado beekeepers' associations raise a good big fund either to purchase the apiaries of drafted members or help in providing competent beekeepers to care for the apiaries while the boys are away? In some instances other members of the family can protect the investment. But in other cases, I know the beekeepers could help wonderfully if they only would. It is our duty to do as these boys have done—sacrifice until we feel it. Why cannot the beekeepers who have prospered by the high price of honey tax themselves, say five per cent of their income for this work? The writer is ready to do his part.

The boys already drafted are: Clyde V. Fisher, Montrose, Colo., secretary-treasurer Montrose County Beekeepers' Association; Wells Pollock, Allison, Colo., secretary San Juan Beekeepers' Association; E. C. Polhemus, Lamar, Colo. There are doubtless others, of whom I have not learned.

Beekeeping as a Side Line

Grace Allen

ALWAYS and everywhere, the world over, there have been conservatives and radicals, progressives and stand-patters. It is almost impossible to read foreign politics without constantly feeling the personalities of the opposing leaders of the conservative and the progressive elements. History is full of them, so too are religion, politics, industry, and the social customs of civilization. Together they make for the steady advance of the race. The radicals keep us from stagnation and the conservatives withhold us from reckless ruin. Naturally enough the majorities are usually solidly conservative, and so progress comes slowly, safely.

Once there was only one man in the world who believed that world to be round; there was once only one who had faith in a "passage to India;" only one who dared nail theses to church doors. Not many years ago woman's suffrage, profit-sharing, and prohibition were mere dreams in the hearts of a devoted and unpopular few. This generation is seeing them come into their own. The conservative majority that clings to the established order of things it was born to, forgetful that it too was once a daring dream, is slowly and awkwardly coming forward, reluctantly, painfully, climbing up into the high places to which these visionaries have led. And there, you know, it will settle, content, and the oncoming generation will find this new point of progress, the established order of things, to be clung to and cherished, and in its turn relinquished most slowly in answer to the patient, eager call of the dreamers and leaders of a fairer day to come. A world-old process it is, thru which God is teaching us to become perfect. And there is no line of human activity thru which it does not surge.

Even among beekeepers — even among sideline beekeepers and amateurs—there is this same tendency to settle into ruts, and smile amusedly at new ideas, when all these well-recognized methods with which we are so satisfied were once new "notions" themselves, smiled at with equal amusement by the beekeepers of an older day! What a hopeless radical and dreamer was the first man who ever "kept" bees at all! How some ancient people must have smiled at the idea of an artificial house for wild bees. Then, doubtless, they became popular. Gradually these first man-made bee-shelters have changed with the changing years. Then in the day of skeps and boxes came the absurdity of movable frames. Everybody smiled; now everybody uses them or is called unprogressive.

And are we now settled to our own satisfaction? or is the open mind become more of a habit with the human race—with that part of it with which we are chiefly concerned—the beekeeping fraternity? Somehow I believe it is, and I make my appeal to this growing spirit of open-mindedness. How the journals help! Their columns are generously open to everything progressive, to the discussion of all methods, old or new. Shall we readers shake our heads and say, "The way I am doing now is good enough for me"? Or shall we be always eagerly alert for a higher degree of skill, a wider understanding, a new vision of possibilities? Nor would this necessitate being swept off our feet by every curious scheme put forth. Let us not waste our seasons in riotous experimenting; but do let us read carefully, listen thoughtfully, and give unprejudiced consideration to every new suggestion.

The Department of Agriculture has established a division of beekeeping and put it in charge of educated, scientific investigators. The man who merely grins and says, "No sense in pampering bees that way," is akin to the mountaineer who was advised to keep hogs that would develop more quickly than his razor-backs, and set aside the suggestion with the drawled retort, "What's time to a hawg?"

While beekeepers who read GLEANINGS do not use razor-back methods, still we are far from the end of improvement in this ancient and fascinating pursuit. A hundred years from now men may smile at our antiquated ways and our limited results. Let us keep always in the line of march. We sideliners especially can experiment in a small way with certain well-advised new methods. Wintering, is it? We can get one quadruple case. Or we can easily try Mr. Demuth's scheme, page 842, November GLEANINGS. Or we can contrive single cases out of boxes. Windbreaks? Perhaps we can set our few bees over on the south side of some fence or old shed for the winter. Or, what is still more thorogoing as an experiment, we can so move only part of them and compare results.

TWO EXTREMES CLOSE TOGETHER.

If "the time to study wintering is in the spring," then the time to study "springing" may be the winter. And that we expect to do somewhat in the next few months. Somehow the spring sets the keynote for the season. It determines which is going to be boss—the beekeeper or the work—order or disorder—care or neglect—beauty or ugliness. We have with us this month the pictures of two backlot apiaries. Notice the contrast. The backyard that was so utterly overgrown with weeds was very unattractive; but it isn't just a question of looks. The neglect that allows hives to be so choked in weeds is pretty apt to be an indication of the neglect that allows lots of other things.

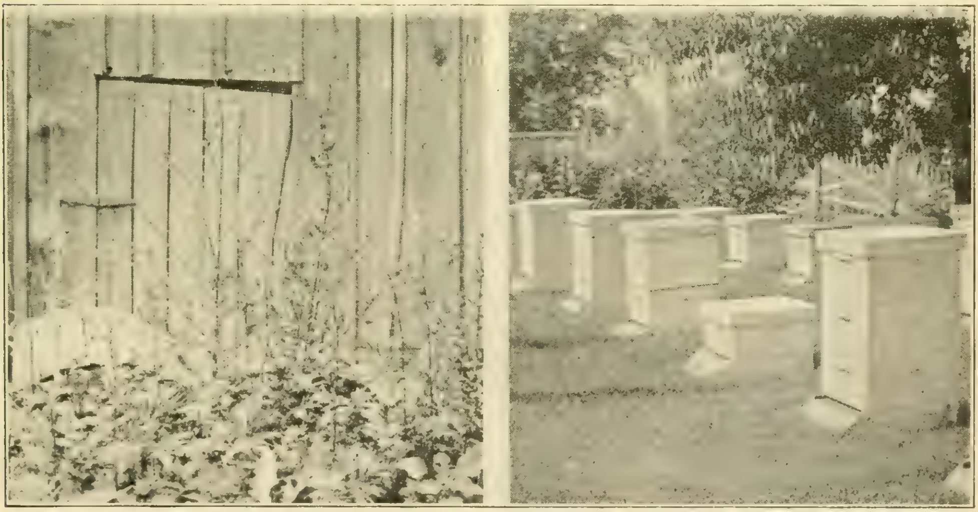
The owner of that weedy beeyard bought two colonies in 1914. He has increased to three. One of these is so weak it will scarcely be able to come thru this winter. This will leave him where he started. He has no extra hives, no smoker, no tools. He bought quite a supply of sections, but no foundation. "I fixed up their little boxes," he explained, "and put 'em in, but I reasoned that wild bees make honey without anybody givin 'em any wax to start it with, and these could too." So they did. And you can guess what it looked like. He has had about thirty pounds, all told, for his family. What is still worse, he is satisfied with this. True, he hasn't much of a location, and there have been no really good seasons for years, yet it's hardly that bad. Of course he has no books, and subscribes to no journal.

The other yard is only about a block away. In 1913 the owner bought one hive and "A B C and X Y Z of Bee Culture" and subscribed to Gleanings. The next year he bought five more colonies and has now twenty-five. He has an extractor, uncapping-can, a goodly supply of supers, containers, foundation, and necessary tools. He has taken off about twelve hundred pounds of honey all together, and realizes keenly how little it is. While he knows his location isn't very good, he hopes to improve his methods until he can obtain better crops. And he will. You can see from the picture that the hives are well painted and in good condition. The grass around them is kept clipped. So are the queens; tho, for that matter, he says that he has had only two swarms and no winter losses at all (in Tennessee, too!).

Speaking of crops, a local sideliner asked me today what beekeepers meant when they said they averaged forty pounds, or twenty, or a hundred. I told him I wished I knew. When they say they average forty pounds, spring count, I do know. When they say their producing colonies average forty pounds, I do know. But when they just say forty pounds, it leaves us guessing.

* * *

A dashing young beeman today
Got married, and all his friends say
He surely can't mean
To usher *this* queen
To her home by the starvation way.



Quite hidden in the weeds are the neglected colonies shown in the first picture. The entrances to the hives are utterly lost in the tangle. The view at the right shows part of a well kept back yard apiary scarcely a block from the other.

FROM THE FIELD OF EXPERIENCE

Conversations with Doolittle

"Why don't those who write articles for the bee-papers get them up and have them printed so that they will be seasonable for the readers just at the time they appear in print? It is rather provoking to read in the December number an excellent article about how to manage swarms, or one on selling our crop of honey in April and May. One of the reasons for admiring your articles in Gleanings has been that many of them come to me at just the time when they are the most applicable."

It is a difficult matter to have everything seasonable that appears in our bee-papers. Some discussions are started when the subject is seasonable, and then the debate runs on until the subject has outlived its usefulness, or become unseasonable—possibly both. Then when a man has had some interesting experience with the bees he is inclined to tell it while the "fever is on," or not at all. By the time he has written it out and sent it to his favorite paper, and the editor has it in type and room made for it, and the printed article greets the eyes of the reader, the time for profiting for that particular knowledge has passed for that year. Then, unless this especial article has been "pigeon-holed," by the time another year brings the proper season for that particular article it will probably be forgotten unless it happens to be of an unusually important character. Doubtless it has never occurred to very many readers of our bee-papers that the last publication received should contain just the seasonable information wanted, as is evidently the thought of our questioner. I know that it would be ideal to have the June Gleanings give directions for the care of a swarm that might come out just when I was reading about it; but we can hardly expect that the publishers of Gleanings could have all the matter of our June number entirely seasonable for that month.

In order to put us in touch with all the topics discussed in Gleanings thruout the year, we are furnished, at the close of each volume, with an index that tells us just where to find the information we want. However, this may not be in the last completed volume; and we may be compelled to refer to some older volumes. But if we have been careful to keep all the volumes in good order we can, by turning to the indices, find almost anything we want. With perhaps the exception of one or two numbers of one or two volumes, I have Gleanings perfectly complete since the first issue.

If, during the busy season, I find something that I would like more time to read, I jot it down in a little book I carry with me; and when the leisure of winter comes, these old volumes are looked over to see what has been said on these particular subjects. Then what I read is boiled down to the smallest compass and jotted down in another book which I keep for the coming season. In passing, allow me to say that, in this way, I find that much which is written as something new was brought up and discussed from 20 to 45 years ago.

Besides the above, I have a way of indexing when reading an uncompleted volume. If I find anything I wish to use or refer to again I note it down in my index; and so in a brief space I make seasonable such matter as I wish to refer to again. For instance, in December I found something about swarming that struck me as better than what I have been accustomed to, therefore I turned to my index book, and under June 1 put "G. 16, p. 257. New about swg." Then when June, 1917, came, the past season, along about the tenth of the month I looked at Gleanings for 1916, on page 257, and there found just what I wanted. If the item was on selling a crop of honey, then the index for October was used, and so on. When tried, if it is better than anything I had used before, such index is underscored. If of value, but no better, it is left untouched. If of no value, a mark is drawn thru the whole. In this way I have indexed nearly all of the volumes, so that I can turn to all the really good things of the past 45 years, or find that which I have considered valuable during all of my beekeeping life.

Now a word about my articles in Gleanings being seasonable: In December of each year I go over all the questions which have been sent in, and, in accord with *my* views, sort out for each month that which I consider seasonable for the month; then during the winter, as I have leisure days I write the matter up, using my index if necessary to help refresh my memory. Occasionally the editor does not seem to agree with me, or for some reason puts in an article for a month for which it was not intended; and where this is done it throws the other articles "out of joint." But I always calculate the editor knows better than I in these matters.

Borodino, N. Y. G. M. Doolittle.

FROM THE FIELD OF EXPERIENCE

Letters from a Beekeeper's Wife

Winter Quarters, Dec. 1, 1917.

Dear Sis:

We have just had a funny experience that I must tell you about, while I wait for my bread. Did you ever notice the first meeting of two strange beekoepers? I have, often, and it is most curious how little it takes to get them around to bees. Then! Bing! Something happens! Some small cord is freed in each man's bosom, that reaches out and wraps itself about the other fellow's heart, and draws those two close together. I have never known it to fail. The secret bond between keekeepers makes them bosom friends at once, and the stream of conversation begins to flow. It would flow on forever, I'm sure, were it not for beekeepers' wives, who have a way of announcing meals or bed-time.

Rob is always delighted to see a "brother" come up our lane and he always keeps him as long as possible. I know exactly the trend of the river of bee-talk with all its ramifications and branches and I must say that I enjoy it, and join in occasionally too. They always begin with the last season's crop—why it was large or small—what it was in other parts of the country—then comes the honey-flow and the weather during it, then to sources of nectar. After that they compare strains of bees, warm up to methods of wintering, queen-rearing, and disease. By this time day is waning and supper interrupts. The visitor tries to be polite and inquires about the children's school, but his mind is always on bees and he will probably interrupt my reply by turning to Rob with "Oh! by the way, did I tell you that I am trying out a new winter case?" It is so hopeless that we let him go and the stream wanders back to its accustomed bed. After supper they discuss the last national convention, then to personalities, find mutual beekeeping friends, until I go to bed. (They never notice my slipping out for they have begun on the relative merits of comb and extracted honey and that is an endless subject!) I hear the drone of their voices until I sleep, and in the morning when I say accusingly to Rob, "What time did you come to bed?" he always replies in a shamefaced way, "Oh! about half-past."

What I began to tell you was that last week an odd-looking man with a heavy, black beard and slouch hat came to the door to inquire his way and Rob stood talking to him a few minutes. Then they sat on the steps and talked more, and I gathered from what I heard that he was a beekeeper. Soon Rob came into the kitchen and said, "Put on an extra plate. Mr. Samson will stay to supper." I whispered, "Why, Rob, you don't know a thing about that man. He may be a robber or a murderer, for all you know!"

"Well, I know he is a beekeeper," Rob replied, and that settled it. Come to think of it, beekeepers as a whole are about as respectable and honest a group of men as you can find. I noticed at the State Convention how few of them smoked, and I know of many clergymen who keep bees. In foreign bee journals you will often see articles signed "Abbe ——" or "Pastor ——," so I believe that is the case in other countries too.

The strange Mr. Samson did stay to supper, and not only that, but over night! I put him in the guest room, much against my wishes, but I put the silver spoons under our bed. I'll trust bee-men pretty far, but not to the extent of leaving my silver downstairs. Our guest seemed very grateful for our hospitality and went off the next morning, he and Rob the best of friends. I couldn't feel just right toward him because of his brigand-looking beard, I think; but this morning the nicest letter came from him on paper engraved "Beechwood Apiaries" and with it was a little bank shaped like a bee-hive for Billy, with a five-dollar gold piece in it! I'll never suspect a beekeeper again of trying to steal my silver spoons!

I will write again before Christmas, but let me say that one of my New Year's resolutions is to be that I shall not mention bees to you again in my letters, for I know you must be tired of them! My bread is riz, and I fly! MARY.

Benefits from Co-operative Association

After existing for twenty-five years merely as an organization, and giving only such meager benefits as could come from an annual meeting with the Farmers' Congress at College Station, the Texas Beekeepers' Association has begun an active campaign of education in co-operative effort under the new name of The Texas Honey Producers' Association. It bids fair to become

FROM THE FIELD OF EXPERIENCE

one of the most profitable co-operative societies in existence for any class of men.

The advent of the co-operative idea into Texas beekeeping began in July of last year when 79 beemen from 19 Texas counties met in San Antonio to discuss marketing conditions as they affected the honey-producers. A project was at once launched for every producing center to organize under one head for the purpose of buying for its members all beekeeping necessaries at reduced wholesale prices, and to sell their crops at great advantage thru the elimination of middlemen and brokers. In addition a bureau was established to answer difficult questions on beekeeping, to assist in getting the best price for honey and wax, to teach the best method of packing and shipping, and to keep members advised of prices and crop conditions in other producing centers. This service is not only given free to all members, but on application any beekeeper is gladly accorded the same information.

Most important of all, perhaps, has been the adoption of a selling plan by the directors of the new association. A sales manager solicits orders for honey of guaranteed association pack and grade, and sends these orders to the members for direct shipment under the registered trade-mark label. Under this method the secretary receives and solicits orders, both great and small, for honey, bees, wax, etc., from all parts of the country, together with the price the prospective customer will pay.

Each member makes a report of the crop he wishes to sell; when it will be ready for movement; its kind, quantity, how it will be packed, and the general conditions in his locality. With a tabulation of this information the selling agency can at once arrange a "get-together" with the proposed buyer in distant markets. Among the advantages of the plan are these: The sale is made with practically no expense to the seller; he gets the best possible price; the produce is shipped direct to the consuming market, which does away with much leaking and breakage as well as rehandling charges; no market is permitted to become glutted with an overstock and a consequent lowering of price; buyers are assured of uniformity of grade and packing; the buyer has to pay freight on the shortest possible haul; and he gets the goods quicker and with the least expenditure of labor.

For many years—and, in fact, until the Farmers' Congress meeting this summer—the Texas Beekeepers' Association was, practically speaking, only of nominal benefit to the industry. Much good naturally accrued from the meetings and reports of the society; but the actual benefits, compared with those of the present, were small. Last year it was determined to try out the plan explained above, and from the first it was a great success. It has been tentatively in operation for fourteen months, and at the meeting this summer it was wholeheartedly endorsed by the unanimous adoption of the following resolution:

Whereas, The Texas Beekeepers' Association and the Texas Honey Producers' Association are two bodies with practically the same membership, and

Whereas, Both bodies hold an annual meeting, and expense could be saved by meeting at the same time and place, therefore be it

Resolved, That for affiliation with the Farmers' Congress these two bodies be consolidated, and that the name of the affiliated body be called in future The Texas Honey Producers' Association.

The annual meeting will be held in San Antonio, in November of this year. It is probable that at this meeting the members will demand a further branching out in the line of supplies, and ask that the association purchase all commodities used by the beekeeper, and handle them as it now does the few purchases made thru the secretary. This will mean that hives, cans, foundation, queen-bees, and, in fact, everything needed to secure a year's harvest, will be furnished to the members at a co-operative saving in price.

One of the salient features of the organization is its work to give beekeepers a better and more stable price for their produce. The system of making direct sales thru a central office greatly increases the selling prices. The fact that beekeepers have been getting too low a return for their product when compared to the price paid by consumers has been time and again emphasized by the agricultural press.

Not only by personal work and selling effort does the association benefit its members and the beekeeping fraternity at large, but a great deal of educational work is accomplished at the conventions held annually in College Station and at San Antonio. Altho the audiences may be limited to 50 or 100 persons, many of the best plans and suggestions are made there, and every member is enabled to reap the benefits in the printed report. This embodies all the speeches, plans, and so on, presented at the meeting, and gives the details of all important matters accomplished by the association thruout the year.

There are no annual dues. Membership shares are $10.00 each, and ownership of one share entitles the holder to all rights and privileges of the organization. Any person may purchase a number of shares up to 100, which is the limit of individual ownership. Fifty per cent of the amount subscribed must be paid in, the remainder a year hence. Five dollars, paid now, will entitle any beekeeper to full benefits. After $10.00 per share has been paid, no further obligation is assumed. Profits of the association are rebated to members in proportion to business done. Most of the larger honey-producers of Texas are back of the movement, and it is hoped that every beekeeper will become aligned with it. Every man interested in Texas beekeeping, either directly or indirectly, is cordially invited to become a member.

The officers are Louis H. Scholl, New Braunfels, President; Willis C. Collier, Goliad, Vice-president; E. Guy LeStourgeon, San Antonio, Secretary and Manager; A. M. Patterson, Cashier Adams National Bank at Devine, Treasurer. The other directors are: Wiley A. Winters, Jourdanton; Richard Voges, Poth; Aug. E. Saathoff, D'Hanis; and Alfred L. Hartl, Elmendorf. The officers and directors are elected annually by the membership at the San Antonio meeting in November. The manager and treasurer are each under a bond of $10,000. The address of the secretary is Box 1048, San Antonio, Texas. Bylaws and plan of organization will be gladly mailed to any beekeeper who is interested. Come with us and help in this great work. E. G. LeStourgeon.

[The foregoing was submitted to the secretary of one of the prominent co-operative associations in the East. His remarks are so interesting that we take pleasure in presenting them herewith.—Ed.]

I think the proposition a good one, but the following points will be necessary to make it a success:

1. That most of the members be large or reasonably large producers.
2. If the market or markets be far away, that shipments be made in carlots.
3. Last, but most important of all, that the volume of business transacted be large, that a strictly capable business manager be in charge, and that all grading standards be strictly adhered to. If any of these last three parts are lacking the plan will probably result in failure.

Akron, N. Y. William F. Vollmer.

* * *

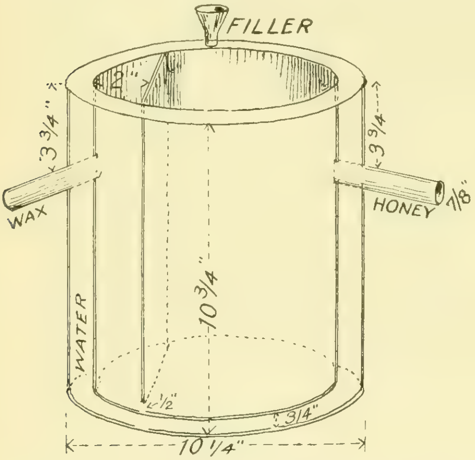
Using a Capping-melter in the Winter

To all who are engaged in the production of extracted honey at all extensively, the question of how best to dispose of the cappings is quite an important one. A number of capping-melters are on the market, and some beekeepers use these melters continuously while the extracting is being done, mixing the honey from the melter along with the general crop taken from the extractor. While a few report satisfactory results from this system, many others, after trying the method, have discarded it as unsatisfactory. Personally I have yet to see the melter that will turn out honey without having a slightly cooked flavor, and I believe about all the different makes have come under my notice.

In using one of these melters a few years ago in our own apiaries, we found these unfavorable conditions in connection with their use at the time of extracting: i. e., when cappings were melted as fast as taken off the combs, and the resultant honey poured right in with the rest from the extractor, the honey was off in flavor and color, no matter how rapidly it was cleared from the machine; if strained, waxy particles in the hot honey would clog up our strainer cloths; if poured in tanks without straining, then waxy particles would be found all over the inside of the tank; and even when strained we found, after putting the honey in pails, that minute dark specks came to the top.

Then, again, our honey-houses at some of the out-apiaries are none too large; and with the heat generated by the stove under the melter it is really too hot to work in comfort on very warm days—the kind of days in which extracting is most easily done. After using the melter for taking care of cappings from about 40,000 pounds of honey one season, we unanimously voted it not a success, and since then we have been draining our cappings as best we could, and then storing them in barrels till winter, disposing of them at our leisure during the slack time.

Some years ago we used to wash the cappings out and use the sweet water for making vinegar; but we soon came to the conclusion that there was no money in the game, as new barrels have to be used with each batch of vinegar, and moreover honey vinegar costs too much. Since then we have been running the cappings thru the capping-melter, and as a rule the honey obtained has been kept and used for spring feeding whenever necessary. Of course the honey before being used has always been diluted with water and boiled. One of the objections to using the melter in this way is that it is always a sticky and mussy job to remove the wax from the honey, for, as all will understand, the wax and honey run out together in one receptacle.



During the past week or two we have been using with much satisfaction a little invention brought out by Mr. Armstrong, of Selkirk, Ont., which does away with a lot of the bother in separating the honey from the wax, and the honey thus obtained is surprisingly free from any foreign matter.

This invention is very simple, as will be observed. It is a double boiler made of galvanized iron, and of the following dimensions: Height, 10¾ inches; diameter, outside measure, 10¼ inches; water-jacket, outside and bottom, ⅞ inch. The bottoms of the two outlets which pass thru the water-jacket are each 3¾ inches from top of the separator. These outlets are ⅞ inch in diameter and have a projection of 2½ inches.

A sheet of galvanized iron is soldered to the inside of the separator, and runs to within ½ inch of the bottom. The center of this sheet is just 2 inches from the side of the separator, and opposite the spout.

The small spout at the top is for pouring in hot water when starting operations. A funnel-shaped top would be quite an improvement.

After filling the separator with hot water the wax and honey will start to run from the melter. In a warm room it will require no more heating all day if the melter is going steadily. Wax and honey are together in the wide apartment in the separator; but the honey, being the heavier, enters under the half-inch space at the bottom, while the wax stays in the large compartment. As the separator fills up, the wax runs from one side and honey from the other. The honey comes out so clear that it will surprise you; and the first ten or twelve pounds of wax will be fit for market. After that, an accumulation of slumgum will unfit the wax for market. With a wire-cloth dipper to take out the slumgum, one might have most of the wax fit for market; but in our case we did not try this, but remelted most of the wax and ran it thru the press after all the cappings were melted.

We ran five large barrels of cappings thru this separator last winter, getting 350 pounds of wax and over 700 pounds of honey, and we are much pleased with the separator idea. At the close of the day's operations we never emptied out the separator, preferring to heat it the next morning before starting, and thus avoid any chance of wax getting over into the honey side of the separator. J. L. Byer.

Markham, Ont.

[Our correspondent refers to boiling the honey that is used for feeding in the spring. It needs to be frequently reiterated that where the possibility of disease exists, mere boiling is not sufficient. Recently Chalon Fowls reported that, as much as twenty years ago, he bought a quantity of honey, and, after washing out the cans and carefully boiling the mixture, he fed it to his bees, with the result that 12 colonies contracted foul brood. It is always a good plan to reboil just before feeding.—Ed.]

* * *

Modern Imbedding with a Ford

Having about 2000 frames wired, and the foundation inserted in the top-bars, I made an electric wire-imbedder that imbeds all three wires. Some may ask, "Why only three wires?" I may as well state now that, as the top wire is so near the top-bar, I do not consider it at all necessary and

FROM THE FIELD OF EXPERIENCE

Imbedding wires in comb foundation by means of electricity furnished by Ford auto.

therefore leave it out, but the main reason is that I desire to have the two ends of the wire at opposite ends of the frame.

I made two frame-blocks on a box by taking a half-inch board (7½ x 16½) blocking it up in the center with a piece ⅞ inch thick, and then nailing on each end a strip ¼ inch thick, thus forming a concave surface. The rounded part along one edge, where the top-bar would come, I planed, so that the wax would not have to follow the curve.

The Ford used was a 1916 model. I took two insulated wires, connecting one to the terminal attached to the horn and front lights; the other wire I grounded on the engine anywhere. (Warning! In imbedding wires do not use the batteries in connection with the Ford magneto). I ran the motor at a speed equal to about twenty miles per hour, using a little less than two gallons of gasoline to 1000 frames.

Altho we have great prospects for the little manager sitting in the high chair, still at present my wife is my best helper. She puts the frames on the blocks and takes them off while I apply the current by means of a wire from the machine wrapped around each of my index fingers so that I can touch the opposite ends of the frame wire. When the wire becomes hot I press down firmly on the frame over the concave block, at the same time disconnecting the current by taking one of my index fingers off the frame. In this way we were able to imbed the wires in 210 frames in one hour. An auto equipped with a storage battery would make it much cheaper, I believe.

The lattice-frame device hanging on the box I use to cut one-inch starters for the frames, cutting five sheets at a time with a good sharp knife.

Joliet, Ill. Edw. A. Winkler.

Reducing City Current for Imbedding Wires into Foundation

When I read the article in April Gleanings about imbedding wires into foundation by electricity, using the city current, I was interested. I am not an electrician, but my fifteen-year-old son is well up on the subject, being as much of a wireless enthusiast as I am a "bee crank."

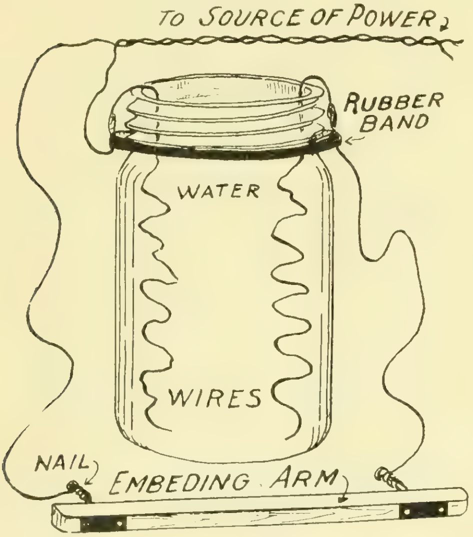
I asked him if he could make a wire-imbedder for me. He began a "spiel" about transformers, amperes, watts, volts, ohms, resistance, rheostats, high frequency, etc., when I interrupted him and told him I was not applying for a course in electrical engineering; what I wanted was a "doo-flicker" to imbed wire into foundation, and in making it we must bear in mind the high cost of living. He said, "I get you," and disappeared.

In about fifteen minutes or so he returned with the outfit as shown in the cut. He said, "This will cost you the rent on a pint Mason jar. If you do not care to go in that heavy, we can perhaps find a broken bottle."

After trying this outfit, I believe it is every bit as good as an adjustable transformer costing several dollars. Any one can make this in a little more time than it would take him to read this article.

Take a strip of inch lumber about an inch wide and one foot long. Tack two pieces of tin one inch long at the right distance apart so they will come in contact with the tacks that hold the ends of the wire in the frames. Drive two nails thru the wood from the opposite side until their points come in contact with the tin.

Then take a piece of flexible electric-light cord long enough to reach from your light-socket to your work-table; untwist about two feet of it and fasten the ends of each strand to the nails that go thru the wood. Cut one strand about one foot from the wood; place the two ends that are cut in a Mason jar filled with water, being careful to keep these ends from touching or you will blow a fuse. These ends may be held in place with a rubber band or a string. The electric current, having to pass thru the water, will become reduced so that it will not heat the wires too hot. Where the wires enter the water it is well to fasten them to two coarse wires run down to the bottom of the Mason jar.



The other end of the cord that is not untwisted is connected to the light-socket and the current turned on. Then pick up the wooden piece; place it so the two pieces of tin will come in contact with the two tacks that hold the ends of the wire and the electric current will pass thru the wire and it will become hot. If you use pure water the heat will not be sufficient. To increase the heat put a little table salt in the water until the heat is just right. Too much salt will lessen the resistance and the wires will become too hot. About half a teaspoonful is right for a 110-volt alternating current.

I do not know whether all will understand just what I am driving at or not. I tried the description on my wife with rather indifferent results; but by a little study and experimenting, I think you will have no trouble.

Vincennes, Indiana. JAY SMITH.

Making Increase in September

"You are a bigger fool than I thought you were." That is what Wm. Atkinson, Selkirk, Ont., said to me when I told him I had been making an increase of some sixty colonies during the first week in September. (This Mr. Atkinson is the man who designed for winter cases a safeguard from sun, snow, and wind, as described in GLEANINGS, page 763, October.) The only comfort I could get out of his opinion was that in his estimation I had, until then at least, not yet reached the extreme of folly.

No doubt there are others (for I have come across them) who think September in Ontario or Canada, or even thru all the northern and middle states, to say nothing of the South, is a wrong time to make increase. With this I do not agree; and when I told Mr. Atkinson how I made the increase he came to the conclusion that the method had embodied in it much more wisdom than folly.

The season's operations crowd pretty hard upon our heels from early spring to fall; and altho a student this summer said that I took good care that no one about me went to sleep during working hours, yet it is often a difficult matter to keep ahead in our work. This is especially true if frequent rains make our heavy clay roads temporarily impassable for automobiles and motor trucks.

Just as circumstances drove me to outside wintering (which I found far superior to cellar wintering), so circumstances well nigh forced me to make increase in September. I wanted the increase, and yet I did not want to sacrifice any of my honey crop. I intended to make this increase two weeks before the surplus honey-flow was over; but from that time until Sept. 1, I had too much to do to undertake it. (We have no dark autumn honey-flow—absolutely none.)

HOW TO MAKE IT.

If one's bees have been kept together, there will be many colonies in front of which there will be large clusters of bees hanging after the supers have been removed from the hive. These are the ones from which to make the increase, the preference being given to 12-frame hives; but 10-frame Langstroth hives also answer the purpose perfectly. The colonies are divided in two, placing half of the combs at one side of the new hive, taking with them the adhering bees; and if this does not prove to be half of the swarm, still more bees are

FROM THE FIELD OF EXPERIENCE

added to them. The two hives are given the same number or letter in order to keep track of them. If the queen is found she is given to the new colony and a young queen introduced to the colony on the old stand. If the queen is not quickly found I look them over three to eight days later; and if queen-cells are discovered, it is not necessary to look into the corresponding number. Again, if I find the queen in the hive (unless supersedure has taken place), there will be a young queen required in the corresponding number. In any case, young queens are introduced to the queenless colonies. You will notice I call them "colonies." Yes, because they are quite strong enough to make a full colony. I have had the bees hanging behind the division-board when it had eight or nine combs in the hive. That is a colony, is it not?

"Ah!" you may say; "but just wait until the old bees that have already located themselves go back to the old stand." Now, I like to please people when I can do it without injury to themselves and without too much injury to me; but I will not wait until the bees return to the old stand and thus destroy the normal division of the colony. If I could not overcome this tendency I would not attempt to divide them early in September. I just close up these hives; and when I get a load of them I take them to another apiary where they will not return.

There are old and young bees in each hive—brood in all stages, also pollen; and if there is little or no honey, which is often the case with a 12-frame hive, they are fed syrup.

If one has no out-apiary he could probably get a place in which to put his bees for a few weeks and then return them home. I remember the first winter I had such colonies; and during stormy winter nights I wondered how it fared with them. The next spring I found they had wintered just as well as any of the others. This is now the third winter that I have tried the plan, and it strikes me that I have found an excellent way of making increase, and that perhaps I am not as big a fool as I seemed to be from surface indications. R. F. Holtermann.

Brantford, Canada.

[If a beginner attempted to do a "stunt" like this he would be pretty apt to fail. Moreover unless the colony is an exceedingly powerful one we should expect that one or the other of the divisions—possibly both, would be too weak to winter.—Ed.]

Introducing by the Honey Method

Time and again has the beekeeping world tussled with the problem of introducing queens safely; but for me the knotty points have finally been cleared up. The plan has proved a 100 per cent success in my apiary. It takes only five minutes, and does not require an expert. I have lost several fine queens by the cage method, and one of my strongest colonies by the smoke method. I know that I am not an expert on smoke, and I expect never to try it again. I can introduce a queen by the cage method in from 30 minutes to 15 days, telling by the action of the bees on the cage when they will accept her. Yet neither of these plans really suits me.

Mr. F. M. Baldwin, from Sanford, Fla., visited me several times this season; and as we were looking thru my bees I showed him a fine queen that I had had in the hive for eight days. At that time the cage was as large as your fist, with bees; and the longer the cage stayed in the hive the more the bees balled it. "Well," Mr. Baldwin said, "just get me a cup of strained honey and I will put her in, in three minutes." Now, I was willing to lose the queen in order to learn something; but I was certain her doom was sealed. Mr. Baldwin took the queen out of the cage and put her in the cup of honey, smearing her around and around until she was completely covered and looked as tho dead. Then he poured her down between the frames.

This was on Friday, and on Monday we looked for the queen and found larvae in the cells, thus showing that the queen went to laying immediately. Look at the time saved by this method, and the time lost by the cage method and others. Since then I have tried this method with 45 queens, some being virgins, and yet the plan has never failed. Sometimes I have cut the queen-cells out and put the queen right in. This morning I removed a virgin from a hive and introduced a queen by the Baldwin method, and in one hour she was laying. By other methods there are a great many queens lost, but I believe that this plan will prove at least 95 per cent successful for all beekeepers, whether experienced or not. By the honey method the queen is in a stupid condition; and by the time the bees lick her off all excitement is over and everything quiet. When a queen is released from a cage she runs excitedly, while the bees pursue her; then she begins to pipe from fear, and immediately they ball her.

Roanoke, Va. Henry S. Bohon.

STRAY STRAWS

Dr. C. C. Miller

SHALLOW extracting-supers are so objectionable that it is agreed that the majority of beekeepers would quit beekeeping rather than to use them, p. 850. I question that. To be sure, not many use them. But can they judge very well without trying? I never used them; but the use of them would not drive me out of the business. Indeed, if I were beginning afresh at beekeeping I'm pretty sure I would use them. Mr. Finley and Miss Fowls have made out a very strong case in their favor; and another point, if I am not mistaken, is claimed by the Dadants, and that is that with them a queen-excluder is not needed. The fact that such successful and extensive producers as the Dadants have used them for so many years is a strong argument in their favor. [It is our experience, based on extensive travel over the United States, that shallow extracting-supers are not under the ban of a majority of beekeepers. Where seasons are short, and colonies of only medium strength, the shallow super certainly has its advantages. A full-depth Langstroth super is often too much of a good thing. The question of shallow or deep supers is largely a matter of locality, individual preference, and sometimes of what one happens to start with. A beekeeper, for example, might happen to buy up a yard equipped with shallow extracting-supers only, and, of course, he will continue to use them.—Ed.]

Regarding the plan recommended by W. E. McEvoy, to replace in fall combs affected with American foul brood with sealed combs of healthy honey, you say, Mr. Editor, p. 854, "You probably left an interval of 24 hours between giving the combs of honey. If you took away the diseased combs and gave combs of honey at the same operation we see no reason why the bees might not store some of the diseased honey in their sacs in the combs above. Anyhow, is it not safer to advise the beginner to be on the safe side?" No, I left no interval of 24 hours nor 24 minutes for the bees to use up the diseased honey in their sacs. What need? They would have all winter to use it up, for remember this is done after feeding of brood is all over. If a beginner should have American foul brood in a colony in the fall, when there was no longer feeding of brood, I should count it much safer to swap combs of clean honey for their diseased ones than to wait till brood was being fed the next season and then shake. Seems to me there's less chance for failure with the fall treatment either with a beginner or expert. [It may be safe for *you* to give sealed combs of honey, known to be all free from disease, immediately to a colony treated for American foul brood; but until the thing has been tested out more generally, we feel inclined to say, "Don't do it," especially to beginners. Let the veterans try it out in a small way first. At all events, we should like to have reports from those who have tried it.—Ed.]

Herbert C. Hoover, the man who tells us how much we're allowed to eat, seems to be a friend to beekeepers. Here's an item from the Chicago *Daily Herald*: "Hoover uses honey in his tea. For those who can afford it, this offers a possible means of conserving the sugar supply." [The editor is doing the same in his family, and so also is all Rootville. It takes really less honey to sweeten coffee or tea than sugar — not because honey is relatively sweeter, but because it has more flavor. Moreover, honey dissolves instantly in coffee, whereas granulated sugar very often and generally does not all dissolve. Experience shows that in restaurants and in private homes coffee-cups (after the coffee has been drank) will have a residue of sugar equal to nearly half of what is put in. For years and years the American nation, and we may say the nations of the world as well, have been wasting sugar in this way. As honey dissolves instantly it will take only about half as much by weight to produce the same sweetening effect in the coffee that is drank, and there will be no residue in the bottom of the cup. Beekeepers should everywhere spread the slogan "Use honey." If honey ever once gets into coffee-cups—and now is our golden opportunity to get it so introduced—it will be a permanent coffee-sweetener after the war is over. This will put honey on a basis where there will be a constant demand that up till now we have not had.—Ed.]

Leslie Burr, what you say about smoking bees out of supers, p. 841, is exceedingly interesting, and I wish you had given fuller particulars. I've never succeeded to my satisfaction in smoking bees out of supers. I've piled them up with part of the bees in them, blowing smoke from a smoker under them, and the bees didn't seem in any big hurry about coming out, and at that there was danger of hurting the honey with smoke. You take *all* the bees with the combs, pile five stories on an empty story in which is *some* smoldering burlap, and in a few moments all the bees are out. What's the secret of success? Do the bees stampede more rapidly when a big lot are present? Or is the secret in having a big lot of smoke ever so much more than can be given with a smoker? How much is your *some* burlap, and just how do you light and burn it? [We have never had any luck in getting *all* the bees out of a set of supers by smoking; and we have used enough smoke at times to make us the objects of criticism if not of arrest for cruelty to animals.—ED.]

DEMUTH'S wintering plan, p. 842, is interesting. You suggest, Mr. Editor, if combs of honey are very full, to have a clustering - space above. Wouldn't it be better to have it below? Don't bees, left to themselves, cluster below rather than above their combs? Possibly, however, you want space for candy above. [It may be a question whether the clustering-space should be above or below. Our idea of putting it above was, as you surmise, to provide for a cake of candy. If the bees make up a winter nest when Langstroth frames are still in a natural position, that winter nest is put out of place; hence we thought it advisable to lay on a cake of candy to provide for a possible deficiency of stores toward spring. A cake of candy put at the bottom next to the entrance would be out of reach of the bees on account of the cold entrance current.—ED.]

UNITING by newspaper method being my baby, I was greatly interested in your remarks, p. 829, Mr. Editor. You are right that it is necessary to punch a hole thru the paper, but not always. When it is warm enough, and the colonies strong enough, so that there is any danger of smothering, the bees are so lively about tearing the paper that a hole is hardly necessary. It seems rather more necessary in a cool time with weak colonies. Once I had a strong queenless colony which I newspapered with a weak queenright colony over it. I don't remember whether I made a hole or not, but the queen was killed. In such a case two sheets of paper are needed without any hole, rather than a single sheet with a hole.

W. J. BOUGHEN, you do well to disturb a colony in cellar by laying on top a comb of honey when it's really needed; but I believe you'd like it much better to give the comb below, which you can easily do with a two-inch space in your bottom - board. The disturbance is very much less, and you can feed a colony at the bottom of a pile as well as on top. [The disturbance in the cellar does far less harm than outdoors; but even outdoors, merely giving bees a comb of honey, if done quietly and quickly, on a moderate day, will do little or no harm, and might save the colony from starvation. In the case of an outdoor colony the combs would have to lie flatwise on top or be put down on the brood-nest. The latter, undoubtedly, would disturb the colony and should therefore be avoided.—ED.]

MY SYMPATHIES are with the queen-breeders who tell their mournful tales, p. 833. I tried rearing queens for the trade one season, and never again for me. If every beekeeper were obliged to try it for one year each, the breeders would have a happier time. [The queen-breeder certainly does have his troubles; but if he could control weather conditions, especially early in the season, he could depend on getting a certain output of queens or bees. But, as dearly bought experience has shown, particularly last spring, the queen-breeders of the world were clearly up against it.—ED.]

"APIARIES where practicable should be utilized for extracted-honey production, as, colony for colony, at least double the number of pounds of honey could thus be turned out," p. 555. I wonder, now, I wonder, if those Massachusetts fellows haven't set that a peg too high. Some say no more extracted than comb can be produced. Generally 50 per cent more has been claimed, and recently that has been advanced to 100 per cent. Is there in any of this anything more than loose guessing? What proof is there for any of the statements?

THE DEATH of O. O. Poppleton makes me feel lonesone. He was one of the veterans you couldn't know without liking. [He certainly was a lovable man. He had friends everywhere; but not only that, he was a prince among beekeepers. The beekeeping world has lost a most valuable man.—ED.]

J. L. BYER, you say, p. 872, "Honey prices are ruling high, higher, and *highest* ever—at least the highest for our time." If you had said "for *my* time" it would be all right; but some of us remember when honey was higher than now, the rule being that it kept even with the price of butter.

"SMOKE makes bees run; so when hunting for a queen don't smoke but spray with sweetened water."—*Schweiz. Bztg.*, 252.

OUR FOOD PAGE

Stancy Puerden

Do you need a new morning dress? Please don't think me rudely inquisitive. I merely wanted to suggest that you could not do better than buy one of the "Food Uniforms," sometimes called Hooveralls. The uniform is trim, serviceable, becoming, easy to launder and to put on, for it fastens with only one button. It makes an ideal morning dress, and is equally useful as a coverall apron to slip on over your best street gown to go to the kitchen and get a meal. The front is reversible, thus prolonging its usefulness before it needs the tub. On the sleeve is the insignia of the Food Administration as shown at the head of this page. I shall have to admit that the neat, detachable, white pique cuffs are nearly always detached from my uniform, for I am the kind of woman who gets into her work clear up to her elbows. The uniforms can be purchased ready made for $2.95. Wearing one helps a woman to bear in mind the saying current in England, "Nothing we can do can equal what the boys at the front endure."

Whether you wear the Food Uniform or not is a matter of personal preference and convenience; but I earnestly hope every Gleanings family has a Home Card hanging in a conspicuous position in the kitchen, and a card in the front window showing you are a member of the Food Administration. Is there a woman who can hesitate to sign the food pledge when she thinks of that bereaved mother in Evansville, Ind., the mother of our first American hero to die in the trenches in France? Then there are the mothers of the two other boys who gave their lives at the same time; there are the mothers, wives, or sweethearts of the seventy men who gave their lives on the transport Antilles; and perhaps even more deserving of our sympathy are the mothers of the twelve American boys who were taken prisoners by the Germans. We mothers whose sons, under the age of conscription, are still safe in school, should be willing to sacrifice to the limit to hasten the end of the war and stop this horrible sacrifice of the youth and hope of the world. And we have not yet been asked to make any real sacrifices. We are asked to "Eat plenty, wisely, without waste, and thus help win the war."

Let us now consider how we can carry out the request to make Tuesday a meatless and Wednesday a wheatless day. Some have said they preferred to make some other day a meatless day. That is your privilege; but I believe it is wiser to take the day requested by the Food Administration for two reasons: In the first place, if every one accepts Tuesday as a meatless day, as a matter of course, you will not have to make apologies to your guests; and as the hotels and restaurants are asked to observe the same day, no member of the family will be apt to spoil your meatless plans by eating meat at a public eating-place. In the second place, Friday has always been observed as a meatless day by a large part of the population, and you can usually get fresh fish at the markets. Therefore if you observe Friday as a fish day you can have two meatless days half a week apart. As one writer puts it, "United, we eat; divided, we starve."

When I began to plan these menus I had in mind a meatless day, a wheatless day, and sugarless day; but after writing the menus for the meatless and wheatless days I found they were both sugarless. To tell the truth, our town has been so nearly sugarless for some time back that I have become quite expert in planning sugarless meals for the Puerden family, and I doubt if the members of the family have even noticed the difference. The Food Administration says this is the time to draw upon our stores of preserves, jellies, and sweet canned fruit to help tide us over the next few weeks until the beet and cane sugar begins to move. It is also the time for us beekeepers in every way possibe to substitute honey for sugar.

Mr. Puerden suggests that we observe an eatless day a week. It might not hurt some of us grownups to have seven eat-less days a week. Now, Mr. Editor, I put that hyphen in myself. The proverbial fallen angel of the printing-office, the proofreader, the editor, or some other meddlesome person persists in sprinkling my copy with hyphens. It sometimes takes me as much as fifteen minutes in a single month to remove superfluous hyphens from the proof. I am monthly expecting to see my maiden name tied to Puerden by a hyphen at the head of this department. Just to illustrate how much harm a misplaced punctuation mark may cause, some misguided person inserted an interrogation point in my copy, where I innocently suggested that M. A. O. tell us something about his potato-digging. Would you believe it, that interrogation point came near shattering a life-long friendship?

MEATLESS DAY.

BREAKFAST
Oranges
Creamed codfish
Whole-wheat toast
Honey
Coffee (milk for children)

DINNER
Baked beans*
Baked potatoes
Honey brown bread (Airline Honey Book)
Celery
Dates Apples

SUPPER OR LUNCHEON
Cream of celery soup*
Toast squares
Potato muffins*
Honey bran drops (November issue)
Home-canned raspberries

WHEATLESS DAY

BREAKFAST
Grapefruit
Corn flakes with top milk
Buckwheat griddle cakes
Honey
Coffee (milk for children)

DINNER
Shepherd's pie (mashed potato crust)
Creamed onions
Canned string bean salad
Rye bread
Apple tapioca*

SUPPER OR LUNCHEON
Welch rarebit*
Baked potatoes
Hoe cake or cornmeal muffins
Honey
Canned peaches

CHRISTMAS DINNER

Roast chicken, turkey, or duck
Stuffing Cranberry jelly
Mashed potatoes Winter squash
Whole-wheat bread
Home-made pickle relish
Celery
Honey Suet Pudding*
Christmas sauce, or honey sauce*
Fruits, nuts, and raisins
Coffee

There are several points to which I wish to call your attention in the above menus. In the first place, tested recipes are given below for the dishes starred. The emphasis should be on the word "tested," for there has been much joking of late about war-time recipes.

Notice that potatoes are used in some form at least twice a day; and for those who prefer heartier breakfasts, potatoes could be added. The growers patriotically increased their potato crops, and thereby stood by the Flag. It is now up to us housekeepers to stand by the growers. Also an increase in the use of the perishable potato means a corresponding decrease in the use of the less perishable wheat. The shepherd's pie is made as an ordinary meat pie with a thick upper crust of mashed potato. Make it without an under crust.

To be consistent, the baked-bean recipe calls for no pork or bacon; but if you have a piece of bacon rind, wash the skin side and use it in the baked beans for flavor.

Let me especially recommend the recipe for honey suet pudding. Many people have asked me for that recipe, for it is an unusually tender, delicious pudding, with a much more delicate flavor than when made with molasses. The Christmas sauce is beautiful in color. Last Christmas, at a large family dinner some of the men chose mince pie rather than pudding; but when they saw the tempting-looking pink sauce they insisted on spreading it liberally over their portions of pie.

Speaking of pie, my pumpkin-pie recipe,

Continued on advertising page.

PLEDGE CARD FOR UNITED STATES FOOD ADMINISTRATION

If you have already signed, pass this on to a friend.

TO THE FOOD ADMINISTRATOR:

I am glad to join you in the service of food conservation for our nation and I hereby accept membership in the United States Food Administration, pledging myself to carry out the directions and advice of the Food Administrator in my home, insofar as my circumstances permit.

Name ....

Street ....

City .... State ....

There are no fees or dues to be paid. The Food Administration wishes to have as members all of those actually handling food in the home.

Anyone may have the Home Card of Instruction, but only those signing pledges are entitled to Membership Window Card, which will be delivered upon receipt of the signed pledge.

In order to reach any who may not have had an opportunity to sign the food pledge we are printing it herewith. Sign it and thereby enroll yourself among the millions of women who are helping to win the war by feeding their families plentifully, yet without waste.

Cut out the pledge and mail it to The United States Food Administration, Washington, D. C.

SIFTINGS

J. E. Crane

I HAVE been inclined to look with envy at the queen-breeders, whom I have thought were independent of the seasons, their business continuing whether the flowers flowed with nectar or otherwise, while we poor honey-producers were wholly dependent on the flowers; but, alas! it would seem from the recital of their woes in the November number of GLEANINGS that they too must depend upon the weather.

* * *

A. W. Finley goes for me on page 849 because I remarked somewhat flippantly that shallow extracting-frames were a first-class nuisance. I am free to admit that they have some advantages. A deep eight-frame super is but little heavier when filled with honey than a ten-frame shallow super. This year we have had to feed quite heavily for winter, and are not able to buy enough sugar to complete the feeding. How nice to be able to take from our supers two or three full-depth frames solid with honey and drop them into a hive that happens to lack stores! If they were all shallow frames we should certainly be in trouble. Again, extracting-combs with us are apt to become clogged with pollen after a few years' use. How convenient to drop them into the brood-chamber and use them for brood-combs when we find them this way! As our surplus honey is usually all white honey, we have little need for sorting it.

* * *

GLEANINGS for November announces the death of my friend O. O. Poppleton. I received a letter from him not long ago, and he was planning to go into a soldiers' home in southern California for the coming winter, having no thought that he was so near the end of his earthly life.

He was a rather unusual man in many ways. His business with its successes, failures, and disappointments, and also his constant ill health during his later years, had not made him hard or sour, but always cheerful and hopeful, ever ready to do another a favor. He was a good man, thru and thru, and we can hardly regret that he has entered into a fuller, richer, freer life than he knew here.

* * *

It is doubtless true, as Mr. P. C. Chadwick asserts, page 780, that a shell fired from a gun will not travel as far in an atmosphere heavily charged with moisture as in air with very little moisture; but it does not necessarily follow that a bird or bee can fly more freely in air with little moisture. A shell is propelled by an explosion in the gun, while birds or bees are propelled by their wings. Heavier air gives their wings a greater force than lighter air.

* * *

There is no reason why bees should not winter well by Demuth's method of packing (see page 843). I should not hesitate to put a hundred hives into such shape if I had the supers at liberty for this purpose. Indeed, the shape of such a hive 9 x 10 x 18 in. high on end would be ideal; and, given a little upward ventilation, a good colony with sufficient stores would winter very well in northern Vermont without any packing at all, but would fare better with some, no doubt.

* * *

That is a capital idea that F. Greiner offers on page 862 when he affirms that bee conventions are not for the purpose of instructing beginners, but for action. There are many practical questions of large financial importance that can better be settled in conventions than elsewhere, while the best method of introducing queens may safely be left to the directions sent out by the breeders of queens.

* * *

By the way, while at the Agricultural College at Amherst, Mass., recently, J. G. Byard showed me the combs of a colony of bees that had wintered on the branch of a tree in the cold bleak climate of eastern New England without any protection whatever. The colony, as I understood, came thru in fair condition.

* * *

Some of our beekeepers who have to feed for winter, and who have failed to lay in a store of sugar during the summer when it was to be had, are now in trouble, for it can be bought only in very small amounts. As a result, there will doubtless be some loss of bees from starvation during the coming winter.

* * *

I quite agree with Mr. Chadwick that a large hive will give us a larger working force than a small one. A few extra combs in a hive seem to act like a balance-wheel on an engine—absorbing power when there is a surplus, and giving off power when there is any lack—a very good thing.

Our Neighbors' Fields

E. G. Baldwin

"I BELIEVE the use of cartons to cover sections of honey should be encouraged, as it not only keeps the comb from dust and dirt, but from flies and other sources of disease, and, in addition, gives us a chance to employ cheap advertising on each carton. * * * I believe in the use of a nice tasty carton that will compare well with other packages with which it is placed. * * * I believe it will pay."—J. E. Crane in *Domestic Beekeeper*, p. 360.

FINDING A LOCATION IN THE SOUTH.

"The northern beekeeper who dreams of finding an ideal location in the South should spend some time there before tearing up stakes and moving his family. In general, southern locations are not equal to those in the North, and social conditions are so different that one should become somewhat familiar with the South before making a change. * * * The best plan for one contemplating such a change is to spend his winters in the South, becoming familiar with the conditions and customs, until he feels sure that he is prepared to adjust himself to them. The northern man who goes south expecting to show those who have lived there for years a better way of doing things is not likely to succeed very far."—*American Bee Journal*, p. 332. [Advice more safe and sane has not been given. —E. G. B.]

WINTER CARE OF BEES.

Dr. E. F. Phillips, the federal head of apiculture in the United States, writing in a recent and timely bulletin, emphasizes one fact that is of universal importance; viz., the imperative need of *wind protection.* He says that wind protection is necessary, and, unless it is provided, heavy packing is of little value. We believe this advice is as valuable for beemen in the South, even in Florida, as it is further north, especially so in November, December, January, and February. The two latter months need it for the sake of the early breeding, the two former for the sake of the life of the bees and the conservation of honey.

GOOD IDEAS IN AMERICAN BEE JOURNAL, P. 336.

1. Use of ten-gallon milk-cans for transporting honey from outyards to the home apiary and extracting-room. They are easily handled, are strong, tight, and yet the honey is easily poured out to the last drop.

2. Doctoring the bee-escapes. If of board, the Porter escape is in the center and strips are nailed to the board, meeting in the center and dividing the board into four equal sections that center at the escape. If the wire escape is used, the escapes are at opposite diagonal corners, and a strip of wood runs from one to the other across the board, making two triangular sections of the board. These both look like good ideas.

3. Enameled wire cloth is rolled into a cylinder about the diameter of a stovepipe and the lower end is closed by like material. This is set into the honey-tank, resting on the bottom, and coming high enough so the top will be level with the top of the tank. The honey poured or pumped into this cylinder is thus strained by settling and is then run off at the bottom of the tank, leaving the sediment in the cylinder. Later it is heated and run thru a cloth. Having been once strained, the honey has but little to clog the cloth strainer. The plan seems inexpensive, effective, and well worth a trial.

SAVE THE WAX.

"Mr. Crane's writings are always entirely practical, and seasoned by a wide experience. He seems, however, to have overlooked a source of revenue when he recommends burning the scrapings from propolized sections. Altho this material looks worthless, when melted with plenty of water and stirred thoroly many will be surprised to find the propolis sink to the bottom of the vessel, and often 30 per cent or more of wax come to the surface of the water."—E. G. Carr in *Domestic Beekeeper*, p. 402.

FROTHING HONEYS.

Why does honey froth or bubble when no ferment is present? asks W. D. Null, *American Bee Journal*, p. 191. He alludes to honeys in Alabama that are so full of air or some element of a frothing nature as to blow out the cappings of the cells at times. He declares that Washington experts say no ferment is present. He begs for more light on the question. [In Florida it is well known that the honey from the cabbage palmetto will froth heavily, and bubble in the cells on uncapping. These bubbles seem to be more air than anything else, for they disappear after extracting. There is no blowing or explosion of covers, etc., such as Mr. Null describes. Surely more careful investigation along this line is demanded.—E. G. B.]

Beginners' Lessons

H. H. Root

If the feeding and preparing for winter has been properly attended to, as outlined in Lessons 9 and 10, there is but little work left to be done among the bees until the first warm days in the spring. The outside entrances should be reduced so that if mice are troublesome they can not find their way into the hive. An entrance ¼ inch high will not admit mice. The length of the opening should depend on the size of the colony, 2 to 3 inches for colonies not overly strong, and 6 to 8 inches for very strong ones. If winter cases are to be used, there should be no alighting-board or other obstruction which would catch the ice and fill up the entrance, thus shutting off the air. It does no harm if the whole hive is covered with snow, altho thawing weather followed by extreme cold is dangerous, as the entrances may be entirely covered with ice. At such times it pays to make an examination and clear the ice away if the hive is packed in solid. Loose snow never does any harm.

This year many beekeepers who were prevented from supplying necessary stores by reason of bad weather in October, have found themselves confronted with the sugar famine. If the amount of sugar required is not too large, the grocers will usually sell what is needed to prevent starvation of the bees, if the situation is explained to them. Remember that dirty sugar can be used, even sugar that has been tainted with coal oil. It is not absolutely necessary to have the white granulated sugar. The best grade of brown sugar, that which is creamy in color, is all right to use for winter stores. In cold weather any sugar must be fed in the form of hard candy laid over the top-bars, since bees can not take syrup in real cold weather. The candy is made as follows:

HARD CANDY FOR WINTER AND SPRING FEEDING: HOW TO MAKE IT.

Into a dish of hot water on the stove, slowly pour an equal amount of sugar, stirring constantly. Make sure that the sugar is all dissolved before boiling commences. If this precaution is not observed, some of the undissolved sugar is likely to burn, injuring the flavor of the candy and almost surely causing trouble for the bees later. If one has a candy thermometer, watch the temperature, and do not let it go above 275 to 280 degrees. Test frequently by dropping a very little of the syrup into cold water (about 50 to 55 degrees F.). When the boiling has continued long enough the drop of candy, when cooled in the water, should be hard and brittle when taken out; but when placed in the mouth it should soften slightly, so that it is tough. When this time has arrived, pour the syrup immediately on to paraffined or waxed paper on a table. Have the table perfectly level, and around the outside of the paper put wooden sticks ¼ inch high to confine the syrup and prevent it from running off. When the candy is nearly hard, crease it or cut it with a heavy knife so that it may be broken up into right-sized squares when hard.

The color of the candy when cold should be about that of light basswood honey. If it is darkened very much it is scorched and unfit for the bees. To prevent scorching, reduce the fire toward the last so that the syrup will boil but slowly

Among the beginners there are members of practically all professions, and there are also printers, storekeepers, poultrymen, and farmers, who keep a few bees. All these can profitably employ their time during the winter months. One who keeps bees as a business usually has plenty to do, for, aside from the reading, studying, and planning for the next season's work, there is wax to be rendered from cappings, if they have been held over from the busy season, or from an accumulation of scraps or old combs; there is the assembling of supplies needed for the next honey-flow, the nailing, painting, etc.

Beginners and professional beekeepers alike, in view of the shortage of sugar and the very great need of a wholesome sweet to be used as a substitute, should leave no stone unturned in the preparation for the honey-flow next season. In the clover districts especially, indications, so far as they can be read in advance, were never better for a good honey-flow next year. The rainfall has been above normal, and from every side come reports of an abundance of clover. Beginners, sideliners, and those who keep bees for a livelihood, should begin active preparation at once, for it is a patriotic duty to conserve the bees which furnish the purest and most wholesome sweet the world has ever known. Beginners especially should read the best textbooks during these months when the bees themselves require little attention. The following list is recommended, any and all of which can be obtained from the publishers of Gleanings, and at a reduced price in combination with a subscription to this journal: "A B C and X Y Z of Bee Culture," by A. I. and E. R. Root; price $2.50; or with Gleanings one year, $3.00; "How to Keep Bees," by Anna Botsford Comstock; price $1.00, or with Gleanings one year, $1.50; "Fifty Years Among the Bees, by Dr. C. C. Miller; price $1.00; or with Gleanings one year, $1.50; "Langstroth on the Hive and Honeybee," price $1.00, or with Gleanings one year, $1.50; "Beekeeping," by Dr. E. F. Phillips; price $2.00, or with Gleanings one year, $2.50.

GLEANED BY ASKING

E. R. Root

G. M., Ontario.—In shipping pound packages of bees to Canada the bees mostly arrive in a starving condition, having in several cases built comb in the packages owing to the bees eating the candy in a circle, thereby presenting a large surface area for the bees to feed on. If a piece of tin the depth of the pie-plate used were pressed into the candy in a spiral form, starting from the center, and gradually spiraling to the edge, a hole bored in the center of the end of the package, instead of a slot, as used, this would always allow the same surface to be worked on by the bees and thus regulate the consumption of the stores.

A. While it is true that bees in pound packages are sometimes short of stores, this shortage would not be corrected by the plan proposed—in fact, it would be made worse in that the bees would get caught in the narrow passageway, and three or four of them would be stuck in the candy so that the rest of the bees would starve to death when a plentiful supply was furnished in the cage. A long experience has shown that it is very important to have the opening to the candy large enough so that a few bees will not plug up the opening. We therefore make the opening in the form of a slot wide enough so that if one or two bees are stuck in the candy there will still be opportunity for other bees to get at the food.

F. E. W., B. C.—1. Is comb for chunk honey usually produced from foundation or starters? 2. If from full foundation, what weight is used, and what depth of frame? 3. Is ordinary section foundation manufactured in full Langstroth depth? 4. If so, can this be used without wire or other support?

A. 1. We are not sure, but we believe it is the general practice to use starters only. 2. If full sheets are used, the ordinary light brood would be necessary. Super and extra-thin-super foundation would stretch too much, and possibly break down. You might be able to use the ordinary thin-super foundation width, which would reach down to about half the depth of the frame. 3. No. 4. If the thin super for sections were made full width it would have to have horizontal wires to support it; and these wires would be objectionable in that they would interfere with cutting out the combs when they were filled.

W. G. M., Idaho.—In case a man in the North orders, say, 15 lb. of bees from the South, and they arrive in bad condition (over two-thirds dead from starvation) and the northern man takes them out of the depot in order to save the few remaining live ones, who should stand the express on the dead bees—the breeder or purchaser?

A. The consignee of an ordinary commodity may refuse to accept a shipment that reaches him in bad order. In this case, legally he probably would not be required to pay express charges. Cases similar to this have come up in regard to the shipment of fruit; but common fairness would suggest that the consignee accept shipment in case of live bees, provided a part of them were alive, and by the same token the shipment should be replaced.

It is the rule, however, that the consignee is expected to pay express charges on the second shipment as well as on the first. But if a shipper wants a pleased customer he would, perhaps, do well to pay the express charges on the second shipment. But sometimes the express company is negligent or careless, in which case the consignee should collect from the carrier if he can.

You have proposed a rather nice question on exact legality and equity. It is hard to lay down a general rule in view of the fact that there are three parties in the transaction—shipper, carrier, and consignee. The second party is very often the one to blame, and not the first. Sometimes the carrier routes the package over its own lines in a long roundabout way, when if it had been shipped direct with a short haul the bees would have gone thru in good order.

Practically all cases of this kind must receive individual treatment; and in most cases the shipper should stand between his customer and loss as a matter of good business sense in order that he may build up a permanent trade in the future.

F. C. J., Arizona.—I bought some two-story hives which had had but half sheet starters. The lower half in the second story had been drawn out to drone-cells. Will it be all right to raise these to a third story and put in their place frames of full-sheet starters? I have 100 other hives that wintered with the second story half full of honey. After brood starts would it be all right to raise it up and put a story of empty starters between?

A. It would be perfectly proper to raise the story that contains the drone comb and put under it supers containing full sheets of foundation. Full sheets are much more satisfactory, and always better for beginners. While the bees will build worker comb from mere starters, the conditions have to be favorable. If you hive the swarm on starters it may or may not build all worker comb. The main thing is to have a moderate honey-flow, no faster than bees can take care of when they will build worker combs for the queen. If the flow is very rapid they will build drone comb and neglect the queen.

In answer to your second question we would not advise you to put a super containing mere starters over the brood. It may work out all right, and it may not; a good deal will depend on conditions. If you scatter a few of these frames containing starters in between frames of brood the bees will draw them down and fill them out with worker comb. You can spread the brood in this way providing it is warm enough, and in your part of the country we presume there will be no trouble on that score.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Another Plan of Eliminating Laying Workers

From the colony of laying workers I remove three combs, place a frame of foundation or drawn comb next to the remaining combs, and then introduce a two-frame nucleus with a laying queen in the side left vacant.

Mathis, Texas. H. D. Murry.

* * *

New Scheme for Colony Records

The illustrations show two sample sheets which I have prepared for keeping a simple and accurate account of an apiary. I know of no such book on the market, but would be glad to see one published. For the beginner it would be ideal because he could profit much by past experience as he referred to his account from time to time. It would be no less valuable to the experienced beekeeper who would use it for studying the success of past treatments of diseases, the progress of weak colonies, or for choosing a hive from which to breed queens. It seems to me such a book as this would enable beekeepers to run their apiaries on a more scientific basis.

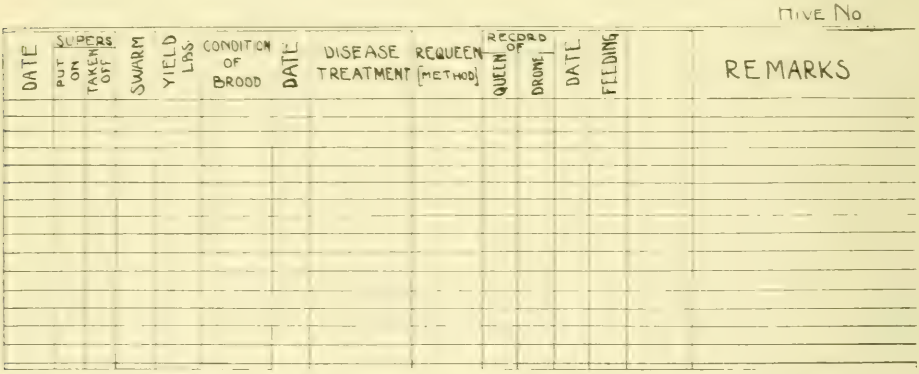
New Haven, Conn. Clarence B. Mackay.

The Distance Bees Will Go for Nectar

Being interested in the distance bees fly for nectar, I have made many tests on this particular question. When I started beekeeping I lived in Yorkshire, England, in a village called Tale, near the banks of the river Aire. It happened that exactly three miles as the crow flies was a place where much heather abounded. This place was called Baildon, and was on the edge of Rumbles Moor. Now, there was no heather any nearer than that, and yet the first year I kept bees my one colony stored 60 one-pound sections of heather honey. This not only proves that bees fly three miles, but also that they fly by scent, and often against the wind, as most frequently the winds came from that direction.

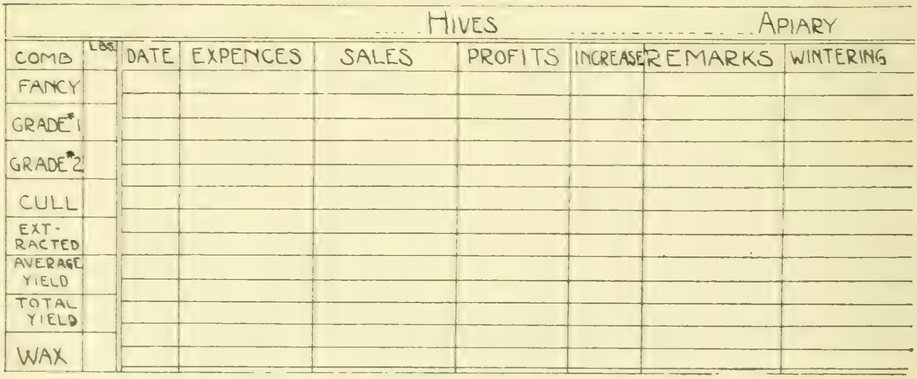
I also tried the experiment of dredging my bees with flour. The entrances were just plastered with flour, so that as they came and went they became completely covered with it. On investigation I soon found that my bees were working on bramble bushes at least two miles and a half away from home. All this has thoroly convinced me that, when it is necessary, bees will fly a considerable distance for nectar.

Barrie, Ont., Can. Edgar Thomas.



HIVE No

DATE	SUPERS		SWARM	YIELD LBS.	CONDITION OF BROOD	DATE	DISEASE TREATMENT	REQUEEN (METHOD)	RECORD OF		DATE	FEEDING		REMARKS
	PUT ON	TAKEN OFF							QUEEN	DRONE				

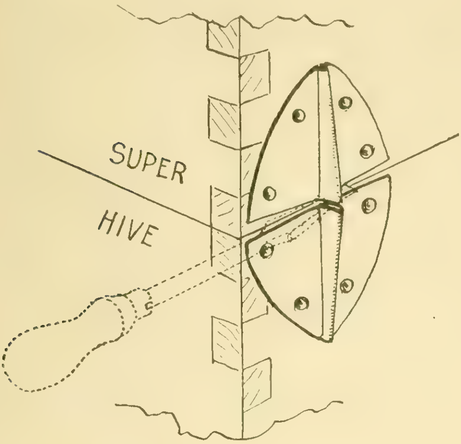


.... HIVES .... APIARY

COMB	LBS	DATE	EXPENCES	SALES	PROFITS	INCREASE	REMARKS	WINTERING
FANCY								
GRADE*1								
GRADE*2								
CULL								
EXTRACTED								
AVERAGE YIELD								
TOTAL YIELD								
WAX								

HEADS OF GRAIN FROM DIFFERENT FIELDS

Easier Plan of Prying Hives Apart The following diagram shows a device of my invention for aiding beekeepers in prying off supers more easily than the ordinary way.



The two pieces are made of strong metal which will readily stand all possible strain to which they may be subjected. They are attached near the corner of the hive, and a screwdriver or other tool inserted as shown in the figure. A slight downward pressure loosens the super immediately.

Hector, Minn. Elmer Anderson.

* * *

Forest Leaves in Bags for Winter Packing Material I don't see why, in all that is said about materials for packing, we do not hear more of forest leaves (or any other material) in burlap bags. The bags of leaves can be put into any place in the fall, taken off at whatever time there is occasion for inspection, and removed when desired the next spring, all without scattering any of the leaves into a place where they don't belong. A bag loosely filled will pack into any place where an equal quantity of loose leaves would go; or if a few bags are filled tightly, and put on all sides of a hive, having the crevices between the rounded bags filled with loose leaves, the thinnest-walled cracker-box may be made into so warm a skep that the bees will not know whether it is warm or cold.

Ballard Vale, Mass. Steven T. Byington.

* * *

How to Get Rid of Pollen-clogged Combs A friend of mine who is an experienced beekeeper recently showed me some perfectly good brood-combs that he had discarded simply because they were filled with pollen. In this valley it is not uncommon to see combs thus clogged. It occurred to me that some readers of Gleanings might like to try my way. Place the clogged combs above an excluder with the queen and plenty of brood, and the pollen will rapidly disappear. The explanation seems to be that the workers have difficulty in carrying pollen thru the excluder, hence a shortage of pollen in the super.

Campbell, Cal. C. F. Alexander.

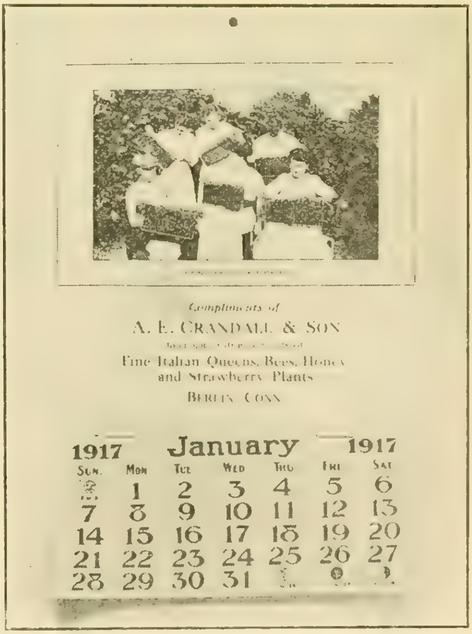
* * *

A Big Gain for Only Seven Days During the past season we experienced an unusual gain in the scale hive for the period of July 9-15. During these seven days the scale hive showed a total gain of 81 pounds, or an average for the seven days of 11 4/7 pounds. This was only from clover—white and alsike. We may have established a record for clover.

July 9,	10	pounds.
" 10,	12	"
" 11,	11	"
" 12,	11½	"
" 13,	13	"
" 14,	12	"
" 15,	11½	"

Rain then checked the gain, altho as good gains were made several times afterward, but not for seven consecutive days. The total gains of this hive were 312 pounds, the highest being from basswood, 14 pounds in one day. The basswood flow was cut very short by a rainstorm.

Minnesota Honey Farm.
Foreston, Minn.



Compliments of
A. E. CRANDALL & SON
[illegible]
Fine Italian Queens, Bees, Honey
and Strawberry Plants
BERLIN, CONN

1917 January 1917

SUN.	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

How one beekeeper advertises.

HEADS OF GRAIN FROM DIFFERENT FIELDS

Don't Put Out the Fire With Water When the Wax Boils Over

A few days ago I was melting a pan of beeswax on the kitchen stove. Altho I watched it carefully to prevent it from getting too hot, it suddenly boiled, running over the top and down the sides of the stove. In an instant the stove was in a mass of flames which rose clear to the ceiling. The heat was so great no one could approach. Realizing the great danger of the flames spreading, I seized a small boxful of salt which was near by. The first handful greatly checked the blaze and it took only four or five handfuls to put the fire completely out. M. L. Dodson.

Jennings, Kans.

[There have been a good many fires caused by wax boiling over on a hot stove, so we publish the above as a warning. Water, unless there is a very great amount of it, only makes a bad matter worse.—Ed.]

CRISMUS IN DIXIE

Dar's 'possum in de uvvum an' 'taters by his side,
An' Mandy's in de kitchen—her mouf is open wide;
She's pattin' out de ash-cake, an' singin' ez she go,
'Praise Gord fum whom all blessin's des natchully do flow!

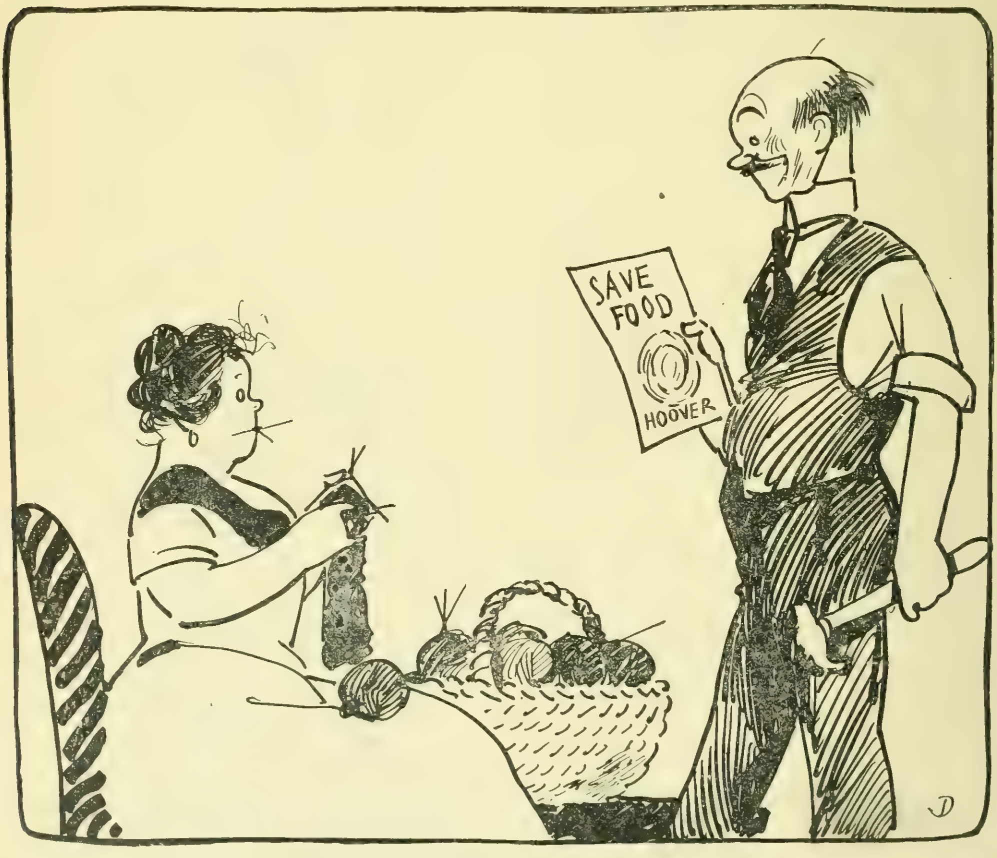
I's settin' by de fierplace, big back-log blazin' bright;
Lawd, I's a happy nigger dis berry Crismus night.
Dat 'possum in his graby, so rich an' nice an' brown,
Dar aint no king in Yurrup kin beat it I'll be boun'.

Our appetites am moojus, looks lak dey'll nuvver fail—
We eats him fum his toofies to de tip end uv his tail.

We eats to full repletion, an den we *has* ter stop.
Uv 'possum, pone, an' 'taters dar aint lef' narry drop.

De snow is on de bee-gums, dar's honey in de comb;
Bees' jes lak me in winter, dey laks ter stay at home.
So let de win' howl outside, we's happy ez kin be
Widin dis humble cabin, my Mandy Gal an' me.

Nashville, Tenn. E. J. Adkisson.



THE BACKLOT BUZZER.

BY J. H. DONAHEY.

It may be true all right that some people are eating omelettes to save eggs; but say, Ma, do ye notice that honey is a good deal sweeter now that sugar is so scarce?

JUST NEWS

Editors

A convention full of snap and interest "right from the word go" was that of the Western New York Honey Producers' Association at Buffalo, November 13 and 14. The attendance was good—over a hundred at some of the sessions—and the beekeepers present, many of whom numbered their colonies by the hundreds, were there for business. W. L. Coggshall, the 2000-colony man, was there, as were S. D. House, Charles Stewart, and other prominent men of the State. There were present also some representative beekeepers of Ontario—J. L. Byer, E. T. Bainard, Wm. Couse, and J. Lincoln. Altho the crowd was large and there were many good-natured debates, Pres. Demuth kept the sessions exactly on schedule time, no changes having to be made in the carefully prepared program that had been advertised. The President in opening the meeting said that no more important work had been done by the Association during the past year than the recommendation of a minimum price by the market-report committee. All the honey in the locality had been sold. J. L. Byer, the first speaker, in his remarks on beekeeping as a business, alluded to beekeeping as "the only honest way to steal a living," but he added that it is no get-rich-quick scheme.

S. D. House, one of the best-known comb-honey specialists in the world, said that the day has gone by when the specialist comb-honey producer can produce comb honey only. To produce a fancy article he must produce both comb and extracted, letting the flow begin and taper off on extracting combs, the bees working in the sections only during the height of the flow. By the way, Mr. House does not fancy the word "fancy." He does not like to produce honey with the outer row of cells next to the section sealed all around—too much drip when the comb is cut out on the plate; and if the honey is left on the hives long enough to be sealed next to the wood, the surface of the cappings is much more likely to be travel-stained. There was considerable discussion in regard to the sizes of sections. Mr. House himself made an appeal for a standard, and said that if the standard adopted were not like the sections he used, he would willingly change his equipment over. The trend of the discussion seemed to be in favor of a 4 x 5 plain section, altho several dissented strongly.

A carton submitted by the New York State Association, showing a full-sized view of a section of honey in halftone on each side, was adopted by the Western Association, this carton to be used by members of New York association only.

Wm. Couse, of Ontario, while not on the program, was asked to tell something of the disappearing disease. He said that while no one seems to know what the disease shall be called, nor what causes it, nevertheless it is a serious trouble. At least three beekeepers have had heavy losses, one extensive beekeeper near Niagara Falls having his apiary reduced from over 200 to but little more than 20 colonies. Inspector Charles Stewart also spoke on this subject, and all agreed that it is a disease that will need to be watched very closely, whether it be Isle of Wight, paralysis, or something that goes and comes of its own free will. Dampness and pollen were named among possible contributing causes. The general verdict was that darker Italians were less affected than goldens.

J. H. Sprout, of Lockport, was elected president for the ensuing year, with Wm. F. Vollmer again chosen secretary and treasurer.

ILLINOIS STATE BEEKEEPERS' CONVENTION.

The Illinois State Beekeepers' convention was held in the sun parlor of the Leland Hotel, Springfield, November 14 and 15. This organization has back of it some of the best beemen in the country, such as C. P. Dadant, editor of the *American Bee Journal;* his brother-in-law, Emil J. Baxter, of Nauvoo; A. L. Kildow, foul-brood inspector; Dr. A. S. Baxter, of Springfield; James A. Stone, secretary, of the same city, and a dozen others almost equally prominent. This organization is the only one in this country (except New York) that has state aid in the sum of $1000 which it uses in furthering the industry in the state and is in addition to the inspection fund. That beekeeping in Illinois is now in such a flourishing condition can doubtless be ascribed to the State association and the work of the few men whose names have been mentioned.

Inspector Kildow reported that, notwithstanding more apiaries were examined than ever before last year, less disease was found than during the year before, proving that foul brood is not only being held in check, but that its ravages are being considerably mitigated.

There was a discussion on the subject of honey as a food, on the afternoon of the first day, led by E. R. Root. In the evening Mr. Frank Pellett, of Atlantic, Ia., delivered a very instructive illustrated address on "Beekeeping North and South." Mr. Pellett is the author of a number of books, and a writer of articles for magazines and papers and also a lecturer.

On the following day there were some spirited discussions on outdoor wintering. J. W. Bowen claimed that bees can be wintered in regular summer hives without the need and expense of packing in his locality. He not only claims it but does it year in and year out. This called forth a lot of discussion which was finally wound up by the majority favoring packing of some sort.

In the afternoon Mr. Dadant presented some rather conclusive arguments in favor of 1½-inch spacing as against 1⅜. His main reasons for adopting this size were the reduction in swarming, a larger winter-clustering space, a larger amount of stores in the brood-nest, and a greater mobility of combs.

It was naturally expected that a representative of one of the bee-supply factories, in the person of E. R. Root, would combat Mr. Dadant's claims. Mr. Root surprised the audience by saying he was afraid Mr. Dadant was right, but urged that the 1⅜-spaced Hoffman frames would be spaced, after they were covered with bee-glue, nearly 1½ inch from center to center.

Dr. A. C. Baxter, the newly elected president, is a live wire if there ever was one. He is a man who knows how to go after a legislature and get what he asks for. He not only knows how, but gets it. The National Beekeepers' Association will do well to employ him as a lobbyist down at Washington, D. C. He has a personal mannerism that seems to carry everything before it irresistibly. He would make an excellent president for the next National. The beekeepers of the country may rest assured that he would make things come to pass. This is no reflection on the former officers.

Dr. Baxter was elected president and Jas. A. Stone was elected secretary.

* * *

Mr. L. E. Mercer, one of the most extensive beekeepers of Southern California, died at the Bard Hospital in his home town, Ventura, Cal., on Oct. 21, of acute pneumonia. The deceased was born in Zanesville, Ohio, June 14, 1846, but later lived in Illinois and Iowa, and in 1883 removed to Ventura. He was a beekeeper before making his home in southern California, and at the time of his death his four apiaries in northern Los Angeles County contained more than 1000 colonies. He had practiced the moving of bees quite extensively. Of late years he had made it a practice to move his bees down to the orange-groves of Los Angeles County for an early crop and back to the mountains at Castair for the sage, using a large motor truck in moving. He will be greatly missed in California bee conventions, not so much for his formal speech-making as for his genial friendliness and numerous little wrinkles and ideas passed around in talk fashion between sessions. He was an ingenious inventor; and a number of ideas, later patented by other people, were first put into use by Mr. Mercer in his apiary. One notable example of this is a popular and effective wax-press. He is deeply mourned by all who knew him as a kindly, just, and honest man.

* * *

West Virginia is coming to the front as a bee territory. It is reported that bee disease is under entire control as the result of work done by Chief Inspector C. A. Reese, of Charleston, and his assistants. Kennith Hawkins, of the U. S. Department of Agriculture, has spent a month in that state making a survey of beekeeping conditions in ten counties and has secured the pledge of about fifty beekeepers to act as demonstrators in winter-packing methods in co-operation with the county farm agents, and these beekeepers are expected to continue to act as demonstrators of better methods in beekeeping next summer. Vast stretches of tulip, poplar, basswood, sourwood, and gum exist in the state, mostly in quite inaccessible mountain regions, where over 90 per cent of the bees are in box hives. Reports of 100 pounds per colony from log gums have come in from reliable sources, indicating what can be done in bee culture in West Virginia.

* * *

The annual meeting of the Northern Illinois and Southern Wisconsin Beekeepers' Association was held in Freeport, Ill., on Oct. 16. A fair number of members attended who reported a poor honey crop thruout the association's territory, and that there are light stores for winter. The officers elected were: President, N. A. Kluck, of Lena, Ill.; Vice-president, S. M. Mulnix, of Lena, Ill.; Secretary and Treasurer, B. Kennedy, of Rockford, Ill.

* * *

The Northern Wisconsin Beekeepers' Association will hold its annual meeting on Saturday, Dec. 29, at the courthouse at Antigo, Wis. The beekeepers of that section of the country appear to be very much alive. In their booth at the county fair they had 3500 pounds of honey on display, a four-frame reversible extractor, all kinds of supplies for handling bees, a large swarm of bees in a glass hive, and all kinds of cakes, pies, cookies, and doughnuts made from honey recipes. E. H. Marsh, of Antigo, is secretary-treasurer of the association.

* * *

The Nashville, Tenn., *Banner* of Oct. 14 contained a very handsome tribute to the worth of Mrs. Grace Allen as a sideline beekeeper. Beneath her published picture the *Banner* printed this: "Gifted young Nashville woman who has achieved widespread recognition for her literary work. Mrs. Allen is quite an authority on beekeeping, and some of her best verses are inspired by her bees." The article in large part was an interview with Mrs. Allen on her work with bees.

* * *

The Northeastern Kansas Beekeepers' Association will hold their annual meeting at Topeka on Dec. 7 and 8, the same date as the state meeting of the Nebraska Horticultural Society and at the same place. Mr. A. R. Hockensmith, Sta. B, Topeka, Kan., is president of this association.

* * *

A postal card received by the Editor of Gleanings from Francis Jager, President of the National Beekeepers' Association, dated at Rome, Italy, recently, bore the following message: "Best regards on our return from the Balkans. May be home early in December."

* * *

Mr. Ben G. Davis, or, more exactly, Benjamin Gant Davis, the well-known queen-breeder of Spring Hill, Tenn., was married Nov. 6 to Miss Gartha Blakemore. Ben Davis is a husky good-looking beeman, a likable fellow, a good queen-breeder, and we have no doubt that his partner for life will be equal to if not better than the other half. Congratulations, Ben.

* * *

Mr. Silas W. Bercaw died at his home in Glendale, Cal., on Oct. 21, in his 80th year. He has been a resident of California for thirty years, and formerly was a resident of Seneca County, Ohio. He was an old-time beekeeper, and interested in the craft till the last.

* * *

The agricultural press of the country is paying more and more attention to bees and honey. A glance thru the columns of the leading weekly and monthly journals that appeal to the farmer prove this statement. It is not to be doubted that very shortly the farm press generally will provide permanent departments devoted to the interests of the beekeeper.

* * *

Commerce Report, issued by the United States Department of Commerce, date of Oct. 3, lists "beehive material" as one of the articles not requiring export license at present. Of course, no beehive material nor any other material can be shipped to any territory occupied by the military forces of Germany or her allies.

* * *

The Mercer County, West Virginia, Beekeepers' Association was organized at Matoaka, W. Va., on Sept. 8. Rev. H. I. Cook was elected president; T. B. Godfrey, vice-president; and P. L. Vest, secretary-treasurer. The meeting was an enthusiastic one, making the prospects good for a very successful association.

* * *

The 14th annual meeting of the Kansas State Beekeepers' Association will meet at the Chamber of Commerce, Topeka, Jan. 7-8, 1918. A splendid program is being prepared and all persons interested in bee culture are urged to attend. A honey banquet will be served at noon, Jan. 8. O. A. Keene, of Topeka, is secretary.

* * *

Mr. Mellville Hayes of Wilmington, O., president of the Ohio State Beekeepers' Association, passed away at his home on the morning of Nov. 21. His death has brought to a close a useful and good life, and removed an enthusiastic member from the ranks of Ohio beekeepers.

* * *

A New Jersey beekeeper writes that, while bees did nothing in his locality in the way of storing a surplus, yet they have there the heaviest crop of apples ever known, and the writer attributes this to the good work of the bees.

TWO SUBSCRIPTION BARGAINS

Altho we have had to advance the price slightly, here is a great subscription bargain:

American Poultry Advocate... } 1 year
Green's Fruit Grower......... } for
Gleanings in Bee Culture....... } $1.25

The Youth's Companion....... } 1 year
and } for
Gleanings in Bee Culture...... } $2.50

THE A. I. ROOT CO., Publishers.

OUR HOMES

A. I. ROOT

The lightnings lightened the world.—Psalm 77:18.

Who hath gathered the wind in his fists?—Prov. 30:4.

And God said, Let us make man in our image, after our likeness; and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.—Gen. 1:26.

My friends, I have a long story to tell you. Now do not be in a hurry to say it is something I have told you already, and please do not be in a hurry to say that what I am telling is away behind the times. It may be so on the start; but be patient and follow me, and I think you will agree that it finally comes clear up to the present; and, most important of all, it looks out *ahead* of the present, and suggests that, instead of worrying about the high price of gasoline, coal, etc., the great loving Father has a great unexplored mine of fuel just over our heads only awaiting the time when poor infirm humanity shall waken up, rouse up, and *climb a little higher* than it has ever done before.

Almost if not quite 70 years ago I ran on to something about electricity in an old doctor book. I think I was not over ten years old at that time; but I did the best I could to construct what was then called a "galvanic battery." After much fussing, and perhaps some crying over it, my good mother suggested that I consult our family physician; but the poor fellow did not know much more about electricity than I did. Some time after, a traveling lecturer came along. *He* told me how to make a battery. I saved up my pennies, went to the tin-shop, and asked the price of sheet copper. I had the tinner cut out a piece and roll it up so as to make a copper cup. I was going to have a tin bottom put in because it was cheaper; but he said I had better have *bottom* and *all* made of copper; and I am very glad he gave me that advice, or I should have had another failure. This copper cup held perhaps three pints. Well, inside of it we put a bottomless cup of sheet zinc. Three wires were soldered to the top of this zinc cylinder, and bent over so the three wires would support it inside of the copper cup. After I had slipped a cork on to each one of the three wires so as to insulate it from the copper, my battery was complete. To use it, I simply filled it with a solution of blue vitriol. They now call it copper sulphate. But even *this* battery did not work (at least I thought so) until some time after. Finally one of the schoolbooks, Parker's Natural Philosophy, gave me some needed instruction. It stated that a current of electricity, if passed thru a wire, close to a magnetic needle, the needle would be deflected from its course. I well remember the evening when (by the light of a *tallow candle*) I stretched a wire north and south on top of the dining-table of our humble home. Being unable to possess a compass, I supported a magnetized steel pen (largest size) on top of a needle near the middle of the table. The steel pen promptly pointed to the north; but after I connected the wire that lay just under it with my battery, the pen, instead of pointing north, promptly flopped around east and west. I think I gave a shout of delight, and announced to all the family that my battery *worked.* I soon got enough wire to reach to the further corner of the room; and by making and breaking contact I could keep the steel pen jumping back and forth, and *finally* made it revolve with considerable rapidity by "making and breaking" the current. This schoolbook said, furthermore, that a coil of insulated wire around a soft-iron core would make a temporary magnet. At that date, no such thing was known in the market as insulated copper wire. For insulation I used candle-wicking, and soon had an electro magnet that would pick up tacks and nails, and drop them again as I made and broke the circuit by detaching the wires.

About this time another "electrical show" came to our town of Mogadore, Summit Co., Ohio. I soon scraped up acquaintance with the professor, and he gave me quite a little *encouragement* as well as instruction. I went to our blacksmith, who was a friend of mine, and asked for the largest worn-out file he could possibly hunt up. I had him heat it and draw it out and bend it in a U shape so as to make what is called a horseshoe magnet. Then I patiently ground off the file-marks on a grindstone, and had the electrical professor magnetize it. I think it was strong enough to pick up a small flat-iron. This, of course, was a permanent magnet. By keeping the armature across the poles it would preserve its magnetic properties. Well, this little electro-magnet covered with the coil of copper wire before mentioned was just about long enough to reach between the poles of my big U magnet. I soon had a "spindle" put thru it at its middle, and then supported it so it could revolve between the poles of the big magnet.

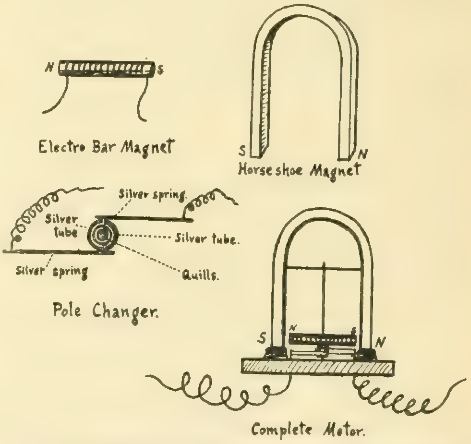
You will notice, perhaps, in the above that I was making a rudimentary electric motor; and the motors of the present day that drive our electric cars and great factories are simply my boyish experiments carried further, on a much greater scale. In order to make this electro-magnet revolve between the poles of the U magnet, the current had to be changed or reversed twice at every revolution. It may be interesting for you to know how a boy out on a farm, without tools or materials, managed to make so complicated a piece of mechanism as what we then called a "pole-changer." I was in the "chicken business," even at that early age, and I pulled quills out of the wings of my biddies until I got some of just the right size to fit closely on the shaft or spindle of my little armature, if that is what it might be called. Then I slipped on a larger quill and so on until I got up to pretty near the size of a silver penholder. In those days it was quite the fashion to have silver penholders. From one of these I cut off a piece of silver tubing perhaps half an inch long. This was pushed closely over the quills I have mentioned. You see the quills were for insulation. Then the two ends of the copper wire making the coil I have mentioned were soldered to the silver tube, one on one side and one on the other. After this was done, from an old ivory comb I cut a little circular set or pair of washers of ivory that I used to slip over the silver tube, one at one end and one at the other. These ivory washers were to insulate the tube and keep it in place after I slit it lengthwise on two sides with a small file so as to make two halves not touching each other anywhere. Then with a silver spring pressing one on one side and one on the other, my pole-changer was complete.

At this stage of my work I had gotten where there were not so many failures. When I first attached my battery wires, the little engine, as I called it, started off with such a whirr that it soon attracted the attention of the rest of the household. With some clock-wheels I made a register so as to ring a bell at every hundred revolutions. With this cheap home-made battery I think my machine (so far as I can recollect), when in first-class order, would make about a hundred revolutions *in a second.*

Let us now go back a little. Besides chickens and electricity I had another hobby. It was windmills. When somebody said that away out west on the desert they made windmills to pump water, I tried my hand at a windmill. We lived on a hill, a little north of Mogadore, where there was almost always a good brisk wind. After I got my mill all ready to try, the wind did not blow. It did not blow on Friday nor Saturday; but on Sunday morning there was a nice brisk wind. I had got things all rigged up to have the windmill run a little spinningwheel, such as they used in those days to spin flax. My good mother was always in full sympathy with all my inventions, and she suspected what was coming with the brisk wind Sunday morning; and while I was getting dressed she said to me something like this:

"Amos, if I were you I would not fuss with that windmill, for today is Sunday, and no doubt there will be a good wind tomorrow, and then you can go to work with a clear conscience."

I cannot remember what reply I made; but I went out and looked at the wind (no joke, mind you), and then I looked at the windmill all ready to have the cloth sails



THE LITTLE MOTOR THAT BOTH PUSHED AND PULLED.

In order to understand the above, keep in mind that "like poles repel and unlike ones attract." In the picture, where the north and south poles are opposite, the revolving magnet would be held quite strongly by the attraction of the two opposite poles; but when the pole-changer represented above *reverses* the direction of the current the two north poles would repel and also the two south poles; and the revolving magnet would quickly swing half way around; but just as soon as it gets in place the little pole-changer reverses the current again, and therefore we have a constant "pushing and pulling" as you will notice. No wonder my little machine started up with a roar that set my boyish heart wild with delight.

The above explanation may help you to understand the principle on which the electric motors of the present day, that run *great factories* of many horsepower, are constructed; and while I dictate these words today, Oct. 16, our people are just installing a motor of *150 horse power* that weighs *over four tons;* and this great motor works exactly on the principle I have tried to explain to you above.

tied up for business. The temptation was too great, even if I was a faithful attendant at Sunday-school at that very early age. I thought I would just give it a little trial. It worked even better than I expected. Well, now, there was nothing to be done to make it run the spinningwheel but to slip on the belt made of some soft material. My mother's warning was ringing in my ears as I did so, and perhaps it helped to make me a little nervous. The spinning-wheel started up with a jump; and before I could get my hand out of the way it caught my thumb between the crank and the upright that held the bearing of the wheel. My yell of pain brought my mother to the spot; and, dear reader, from that day to this it seems to me that whenever I undertake to do anything on Sunday that seems to transgress that command, "Remember the sabbath day to keep it holy," I have been punished, in some way. Mrs. Root says her only brother used to say when he was a boy that it did not *pay* to go fishing on Sunday, as a fellow always has bad luck of some kind. A little later I built a windmill up on top of a pole, and it churned the butter and pumped water for mother. At that time there was scarcely a windmill in Ohio, and mine, of course, attracted a great deal of attention. The only trouble with it was that the cloth sails generally blew to pieces more or less in the first big storm.

When Gleanings was first started it was printed with a foot-power press; but it seems to have been received with so much favor that in a little time power of some kind was needed, and my first effort was in the shape of a windmill. I think it was a 17-foot machine placed on top of our two-story brick building. When the wind did not happen to blow, of course we could go back to foot power to get the little journal out on time; and a good many times when the wind sprang up in the night I "sprang up" also, and ran the press by windmill power. When the press went too fast I had to hustle sometimes to feed the sheets and get them in straight; and I had an arrangement so that when the mill ran too slow I could use the foot power until the wind revived and caught up. This was arranged with a sort of ratchet; and when the wind would spring up and come to my relief I would sit on my stool and rest, while I fed the sheets. This same windmill also made our hives, frames, etc. See Gleanings for Nov. 1, 1914. I think we used the windmill to print Gleanings for two or three years. As gasoline-engines were unknown at the time, when orders for hives came in too fast for the windmill to keep up, a Bookwalter steam-engine was added for reinforcement.

Well, what have windmills to do with an electrical experiment? you may ask. Let us go back a little to the "electro-magnetic engine." By the way, this was the same apparatus that ran the little sawmill that I used on my lecturing trips—see page 614, Aug. 1, 1915. Well, after I discovered that my little battery would run that electric motor with such vim I discovered also that running the motor by *mechanical power* would generate an *electric current.* Even twirling the shaft with the fingers would produce current enough to deflect the steel pen balanced on the point of a needle. Well, what of it? If the windmills I have been describing had been arranged to run that little motor, then the wind would have furnished an electric current to light lamps, run cars, heat our dwellings, or do anything else. You may say this has already been done, but that the power furnished by the wind is so irregular that it has been thought cheaper to use coal or gasoline for our mechanical power. Now we are coming to business.

Both gasoline and coal have lately been going steadily up. We are told by competent authority that more gasoline is being used just now every day than is produced by the whole wide world, and we get along only by drawing on our reserve stores. How long can this last? The same may not be true of coal exactly; but if the people of the United States do not succeed in holding down the gambling in coal we may have a similar state of affairs.

Much has been said on these pages, as well as on the pages of almost every other periodical in the world, about the need of short cuts between "producer and consumer." Now, dear friends, do you get a glimpse of the new hobby that has been making me happy for several days past? You hear the wind blowing over the roof of your house almost daily during these autumn days. There will be more of it when winter comes. It is blowing everywhere—not only over the home of the humblest peasant, but over the roof of the millionaire. Reach up and get it. Get it to run your electric automobiles; get it and use it, "without money and without price." Use it to run all needed machinery about the home. Use it to do your cooking and warming.

Just now I am made happy by having a little electric stove that costs only five or six dollars to warm the bathroom nights and mornings. When we have real cold weather we shall have steam heat; but it does not seem worth while to put on steam for just a little while nights and mornings. Somebody suggested I might have a little gasoline-stove; but such stoves spoil the air more or less by their fumes. Electricity gives just the heat you need, and just as long as you need it—no waste, no ashes, no gases. My cousin, Mr. Clark Wolf, living in the suburbs of the great city of Akron, a few days ago showed me an electric cooking-stove. It would roast, bake, or boil anything. There was a sort of clock attached to the stove, and Mrs. Wolf could set the apparatus to heat at *any temperature*, and keep it hot just so many minutes or hours, and no longer; and then the faithful electric servant would carry out the instructions to the letter. There was also combined with it a "fireless cooker." It would heat the food just so many minutes or to just such a temperature, and then shut off the current and let the "fireless" do the rest without expense. The price given for the current to the great city was so low that Mr. Wolf thought, all things considered, that the current might be cheaper than either wood, coal, gas, or gasoline, for cooking and warming; and there were no ashes and no bad gases.

I have already told about the little electric automobile here in Ohio that carries me wherever I want to go, from a few steps to thirty or forty miles. Well, I am planning also to have an electric automobile in Florida. Now do not be in haste to call me extravagant when I tell you that this new electric will not cost more than half as much as the automobiles that we see all around us. In fact, it costs only about *a fourth* of what some of them do. With the windmill to furnish the current the expense will be far less than gasoline. In fact, it will not cost you anything except to replenish the batteries; and the latest improved batteries are said to give 10,000 miles of travel before they will need replenishing in any way. I may not live to see the time, dear friends, when wind power shall furnish the world with heat, light, and fuel, simply by reaching out your hand and taking it as a free gift; but even if I do not, I am sure that some of you will.

Once more, is there any danger that selfish and greedy men shall make a monopoly of wind power? Can they get a "corner on the market"? Is there any danger there will not be room enough overhead for the windmills that may be needed? When you sing again, "Praise God, from whom all blessings flow," do not forget to include among his many blessings the gentle breezes and the raging wind that purify the air and which are going to prove in the near future one more great and precious gift that we have only to reach out and *take* from the hands of the loving Father.

HIGH - PRESSURE GARDENING

OUR OHIO GARDEN.

Today, October 24, our garden stuff is practically all gathered, and I thought I would make a little summing up. On page 802, October, I said my one peck of Early Ohio seed potatoes gave ten pecks. Of course that is nothing to brag of; but the Early Ohio, even if it is of excellent quality, is a poor yielder as a rule. Just when seed potatoes were hard to get, our Medina folks sent to Michigan and got a carload of the Rural New-Yorker. From one bushel of these Rurals I grew 25 *bushels* of nice potatoes, even if it was almost July before they were planted. I not only dug them myself, but wheeled them up from away down on the creek bottoms; and I want to tell you what kind of wheelbarrow I used.

MY NOVEL WHEELBARROW.

Something over a year ago I told you of getting a very light little cultivator of Sears, Roebuck & Co. In fact, it weighs a little less than 20 lbs. Well, the big heavy wheelbarrows that we have over at the factory are almost a load for an old man like myself, to say nothing of potatoes. Now I will tell you what I did. I just turned over my little light cultivator so the plow part was up in the air. Then I set a bushel basket between the handles, and I had a very nice light easy-running wheelbarrow. Digging a bushel of potatoes every forenoon and afternoon, and wheeling them on the little cultivator, is just about the kind of exercise I need to keep in good health. My son Huber, across the way, after seeing me wheel potatoes, took his heavier cultivator and set across it *two* bushel boxes. I give you the above suggestion so that when you do not have a wheelbarrow handy, or perhaps do not own one at all, you can make almost any garden cultivator do the work of a wheelbarrow.

By putting on the rake attachment you can hang a basket or two on the teeth of the rake, or lay your hoe across the rake teeth in a like manner.

By the way, we had such a late and cold spring that much of my garden stuff was too late to mature; but we succeeded in growing quite a few dasheens, even if the frost did catch them early in October. This is the fourth season we have grown them here in Ohio, and I still think that a soup made of dasheen tubers, eaten with crackers, is about as good as an oyster stew.

THE BABY'S DELIGHT WATERMELON.

We have grown this luscious little melon again this season. There are three things that, in my mind, put them ahead of any other watermelon. First, the seeds are so small that you do not have to bother with them at all. Just go right ahead as if there were no seeds. Second, the little melons are delicious, even if they are not ripe. Third, they are so very early that they are ready for use before any of the big melons get anywhere near it. I do not think that any of them this year got really ripe. When I saw that the seeds and the flesh were not even colored at all when frost came, I thought they were no good until I tasted. Mrs. Root said, "Now, look here. If you eat all of that unripe melon for supper you just see what will happen." Well, nothing *did* "happen," and I have done the same thing again and again; and I do believe they are the most luscious watermelon I ever tasted, even when unripe. Burpee suggests in his catalog that they are just right to serve like grapefruit, giving each guest half a melon; but he says the average guest would be pretty sure to want the *other* half after he had finished the first one.

DREER BUSH CANTALOUPE.

When I saw by Dreer's catalog that they had a cantaloupe that grows on *bushes*, it made me think of the old couplet:

Hail Columbia, happy land!
  Where the gold it hangs on bushes,
And the fish swim on dry land.

Dreer says that, on account of the bushy habit, one can plant the melons only three feet apart; and I confess I rather expected to *see* the melons hang on the bushes. They did not do that, however; but just as soon as the great sturdy plants began to branch out, the little melons set so thickly as almost to touch each other. They are not quite as large as the baby watermelons, but are fully equal to any other cantaloupe we have ever gotten hold of unless it is a cantaloupe that was brought us by "Mel Pritchard." I think he said he got it of Kellogg, the strawberry-man, of Three Rivers, Mich. He said the seed cost something like a *dollar* for a teaspoonful. This cantaloupe is certainly one of the best; and it has such a small cavity for the seeds that you have a good lot of luscious melon. I do not suppose the seed will cost so much another season.

THE POTATO-PENS AND THEIR OUTCOME UP TO DATE.

It seems this whole thing has turned out even worse than I anticipated. The most promising-looking pen in our vicinity—one that showed rank-looking vines over the top of the pen, and to a certain extent over the sides, did not give as many potatoes as were planted. Only those on top or near the top, and those close to the outside, made any growth at all. Quite a number of inquiries have come in in relation to this matter. Below is one of the replies I received from *Successful Farming:*

> *Dear Mr. Root.*—Thank you very much for advising about the results produced by the potato-pens. It seems that people will have to go along continuing to use the level surface of the earth for potato-growing instead of building towers of Babel or growing potatoes in the air.
>
> SUCCESSFUL FARMING.
> F. J. Wright, Ass't Adv. Mgr.
> Des Moines, Iowa, October 20, 1917.

There is a good wholesome moral in this whole thing. When you are looking for accurate information as to what is being done in the farming business or any thing else, do not get your information from the *Sunday daily papers.*

Later.—I have just received one more report which, perhaps, we may say is a little more encouraging. A friend of mine made a small pen and planted one peck of potatoes. He just reported digging three pecks of very nice large tubers. But this friend took great pains, even hauling rich soil from the river-bottom two miles away; and he has actually succeeded in getting *three times* as many potatoes out of his pen as he planted—not very encouraging when we consider that he ought to have had something like 25 pecks from the one peck if it had been planted in the good old-fashioned way.

A REPORT FROM THE "HENDRICKS PEN."

Dear Mr. Root:—I made a trip to Mr. Hendricks, of potato-pen fame, whom I found at home. By the way, I had known him for a number of years. His pen, a small one, was a total failure. He says he is not discouraged, however, and will profit in future by his experience. In the first place he says a friend brought him a load of fertilizer which caused the potatoes to grow to vines. It should have been a light soil with mostly sand and trash to keep it loose. He also says "the excessive rains caused the soil to pack and bake—should have had a cover to shed off the rain." Some reports he received were a success, but mostly failure. I have seen several pens which I do not think were even dug. His pen had a few "marbles."

Mr. Hendricks was "misquoted" by the papers. He says that he had not tried it in Missouri, nor since 1878, potatoes always being cheap until last year. Owing to Mr. Hendricks' health he could not tend to it right. Very truly,

Kansas City, Mo., Nov. 4, 1917. G. P. STARK.

ELECTRICITY FOR WIND POWER.

The letter below is one of my happy surprises. After what has been said I think it will be read with interest:

Mr. A. I. Root:—I saw a notice in GLEANINGS for October, page 811, asking for information about using wind to generate electricity. I have such a plant, and have used it three years, and it has proven to be a success. I am sending you several pictures of the mill, batteries, switch-board, and motor doing different kinds of work. We also churn, iron, and run a vacuum-cleaner, charge auto batteries, etc. We charged 30 of them last winter for different parties. We cleaned 5000 bushels of grain last spring with it. The wheel is 16 feet in diameter. The rim is seen on the outside of the wheel which the belt runs on. The generator is on the tower, always in line with the wheel. The belt runs from the wheel over an idler to a three-inch pulley on the generator, and back to the wheel. It is arranged so that if the mill generates more than is being used, the rest goes to the batteries; and if not enough, the lights draw the rest from batteries. If the wind goes down, the lighting work goes on with the help from the batteries. As the wind power is not steady, the voltage is not always the same. The volt-regulator on the switch-boards holds the voltage on the lights always at 32 volts. The mill will generate as high as 45 volts, and from 1 to 30 amperes, according to the wind.

This windmill cannot be used for other work. That and the switch-board for regulating the windmill current were invented by George Manikowski, of Wyndmere, N. D. They have a plant there for manufacturing the same. The name of the company is Wind Electric Co., Wyndmere, N. D. They would be glad to send you a full description of it if you will write them. I refer you to the Agricultural College, Fargo, N. D. This young man received a good part of his electrical education there.

We farm 2200 acres here in a body, and use a lot of electricity. I have tried the plant for three years, and it has "stood up to the load." They have a better wheel today.

Mr. Root, you seem like an old friend. I took GLEANINGS in 1879, 1880, and 1881. At that time I lived in Williamsport, Pa. In the spring of 1882 I came to North Dakota. I thought it was too cold for bees here, but I have never lost the liking for them in all this time. Two years ago last spring I thought I would try them again and also GLEANINGS. Bees do well here in summer, and they winter all right if well packed. My bees averaged over 100 lbs. to a colony this year, mostly on sweet clover. It grows well here, as does alfalfa. I use a lot of both for hay. I know you are a busy man, but I hope you will write and let me know what you think of the windmill outfit. T. A. WILLIAMS.

Rt. 1, Cleveland, N. D., Oct. 15, 1917.

After reading the above I at once asked for further particulars about charging the thirty auto batteries, and below is his reply:

We charged the common auto light and ignition batteries. It is so cold here that they have to be stored and recharged about once a month to keep them good. There are no electric cars nearer than Jamestown, so we have never had any experience with them. My oldest son is an electrician. He says the plant is all right for electric-car batteries, and for charging common batteries. He made a switch-board for controlling the amperage, thus governing the amperes by the number of lights he turns on; but for electricity for batteries one would not need this—simply charge direct from the plant.

Cleveland, N. D. T. A. WILLIAMS.

In regard to beekeeping in the Dakotas, I have remarked before that I have for some years owned half a square mile near Mitchell, S. D.; but I had somehow gotten the impression that there was not very much for bees in that region. Our good friend Williams, however, tells us he averaged over 100 lbs. per colony, and I presume this comes about because of the introduction of sweet clover and alfalfa.

In regard to the Wind Electric Company, Wyndmere, N. D., I am trying to get them to ship me an outfit to my Florida home. The generator is on top of the tower close to the windmill, and the power comes down to the ground by just a simple wire, thus avoiding a great lot of useless machinery, friction, etc.

Later:—Bradentown, Fla., Nov. 13, 1917. I have just ordered an outfit such as described above; and the inventor, Mr. Manikowski, is to come down here and install it.

"THE AIRLINE BUZZER."

The above is the title of a little sheet started by our office people; and the editor, Mr. Garges, asked me to give a little talk on how to succeed in business. Well, inasmuch as the Airline Buzzer is all printed on one side of a sheet of paper 10 by 7 my thoughts must, of course, be "boiled down," and here it is:

A MESSAGE FROM A. I. ROOT.

I have been asked to give a little advice briefly as to how to succeed in business, etc. This reminds me that in olden times, in reply to the question "How to get a long *well*" the answer was, "Dig it deep."

Well, my advice to the young people, both boys and girls, starting out in life's business is to "dig it deep." Whatever you go into, make yourself master of all that has been done or is being done along your line of work.

When I started out to make bee culture my business for life, I hunted up all the bee-books published in America. Then I did the best I could to get hold of the bee literature of the whole wide world. When the only copy I could get of the celebrated Huber was printed in German, I hired a German schoolma'am to read it to me and translate it into English. I well remember the puzzled expression on her face when she asked me if I had ever heard of anything like "bee-cradles." At first I was almost as much in the dark as my teacher; but pretty soon I said, "Oh, yes! queen-cell." Then she too smiled and said, "Yes, I guess that *is* it."

Well, now, my good friends, my advice is, if you wish to succeed in *anything* you happen to work at, study it up night and day. Get to be master of all that has been done in that line in the whole world. In other words, "Dig it deep."

Index to Gleanings in Bee Culture

Volume XLV

In using this index the reader should not fail to note that it is divided into five departments ,namely, General, Editorial, A. I. Root's writings, Contributors, and Illustrations. The index of General includes everything except Editorials, Illustrations, and A. I. Root's writings.

GENERAL

A

A B C and X Y Z Finished.. 276
Advertisers Must Pass Examination 276
ADVERTISING
  Airline Honey 130
  Effective National.....36, 188
  Garage, Good Place for... 597
  Letters from Beekeeper's Wife 680
  on Calendar 949
  Roadside 13
Agee, Alva 135
Alfalfa (see Clover)
Alley Traps Destroy Drones. 295
Alsike (See Clover)
ANTS
  Kill Queens 795
  Remedy for 131, 862
APIARY
  Apiaries Degenerating.... 529
  Arrangement to Save Steps 39
  Carefully Kept and Negected 931
  Damaged by Storm...... 876
  Finding Locations in South 945
  Management, 300 Yards.. 839
  Mysteriously Wiped Out.. 703
  Proper Size of.......... 272
Aster Honey (see Honey-plants)
Attic Beekeeping.......355, 457
Australia, South, as Location 718
AUTOMOBILE
  and Trailer 58
  Extracting on, at Medina. 599
  for Out-apiary... 363
  for Selling Honey.....49, 596
  Moving Bees by......... 846

B

BARRELS
  in California 194
  to Prepare for Honey.... 699
  Vinegar, Unsafe for Honey 867
Bartlett, Ira D., How Business Increased 178
BASSWOOD
  (see Honey-plants)
BEE
  and Poultry Demonstration Train 464
  (See Enemies of Bees)
  Life of Worker.......... 693
  Literature (See Literature)
  "Pep," Iowa Publication. 370
  Suit, Ideal 382
  Suit for Hot Day........ 624
  (see Bees)
BEE-ESCAPE
  Bee-escape 932
  Improvement in Board.:. 945
Bee Journals, how Doolittle Reads 932
Beekeeper, Who is Eligible? 54
BEEKEEPERS' ASSOCIATION
  National, now left in charge of John C. Bull........ 796
  N. C. State 873
  N. J. Demonstration..... 719
  N. J. Exhibits 877
  Queensland, Aus. 717, 796
  Ramsey Co., Minn 637
  Swiss 114
  Texas 701
  Tupelo Organized 636
  Virginia 718, 876
BEEKEEPERS'
  Bond of Sympathy Between 933
  City, California 213
  Convention. State schedules 875
  Item 290
Beekeepers not Good Bookkeepers 139
  Review now Domestic Beekeeper 136
  Supplies Should be Standardized 786
  Who have gone to the Front 929
BEEKEEPING
  Advantages of, Doolittle on 343
  Advisor for California.... 924
  as a Profession, Doolittle on 764
  as a Sideline a Curse?... 455
  as Occupation 32
  Backlot, Trostle on 44
  by Sideliner 851
  Extensive, 300 Yards, Leslie Burr on 839, 841
  Favorable to Good Morals 765, 853
  for Teachers............ 696
  in Is. of San Domingo... 682
  in Manitoba 761
  in South Aus........... 718
  Interest Awakening in W. V. 863
  in Wis. to Front 142
  Only Two Days a Week Required 334
  Rewards of 54, 604, 617
  Short Time Necessary in Apiary 697
  Silsbee's Supplies Burned. 497
  Various Kinds of........ 696
  vs. Bookkeeping 473
BEES
  and Fruit Together...332, 864
  and Orchard 737
  Are They Irritated by Tar Paper 133
  Boys and War 449
  Close to Roads in Illinois.. 375
  Cluster in Winter....... 860
  Colliding on the Wing.... 115
  Cross Ones Sometimes Good Workers 52
  Diseased Worked on Shares 212
  Distance of Flight, May Depend on Air........ 780
  Dying on Snow......... 134
  Educate Children........ 360
  Equipment for First Start. 285
  Hatching 208
  How Long Act as Nurses.. 272
  How Many Quarts in a Pound 55
  Hybrids as Honey Gatherers 708
  Immature,Why Carried Out 127
  in an Attic.........355, 457
  Irritated by Rapid Motion. 115
  Odor When Swarming.... 613
  on Combs Barred from Ontario 283
  One-eyed. C. C. Miller... 855
  Profit in 32
  Pound Package,Symposium 172
  Quaint Ideas from Old Books 765
  Shipped to Canada not Quarantined 283, 370
  Southern as Hardy as Northern 131
  Sports 772
  Starting with 204, 364
  Value on Farm in Texas.. 290
  vs. Smelter 30
  Why Cross at Certain Times 134, 552, 630
  (See Bee)
Bee-trees, Tapping one in Australia 686
Beginner's Equipment 285
Bibles, War Increases Demand 773
Birds (See Enemies of Bees)
Books, Value of for Beginners 471
Borrowing Differs from Robbing 631
Botany, Study for Beekeepers 652
Bottling (See Honey)
BOX HIVE
  Box and Trees, Transferring from 364
  Demonstration in Transferring 626
  Disappears in Texas..... 871
  Eliminated by Education.. 289
  Prohibited in Michigan... 460
  vs. Making Increase...... 189
BREEDERS
  Testing (W. A. Lishman). 185
  (See Queen Rearing and Breeding)
BREEDING
  Caused by Presence of Stores 780
  Fallacies in 27
  from Best Queen (Miller). 693
  from Dominant Race.. .. 123
  from the Best 189, 699
  Miller, C. C. on 436
British Columbia Honey Crop, 1916 370
BROOD
  and Drones in Nov....... 213
  Chambers, Contracting for Winter 861
  Chambers, Two for Breeding 56
  Danger of Chilling....361, 533
  Equalized in Spring...... 700
  Hatching 208
  in Cells 208
  in Outside Combs........ 357
  Miller, C. C., on Equalizing 452
  Overheated 633
  Spreading of 52, 278, 473
  Two Frames Produce Three Pounds of Bees.. 612
  Unsealed Above or Below? 854
  When Advisable to Remove 715
  Why it Disappears in Fall 45
BROOD-REARING
  Excessive 544
  How Early it Starts...... 374
  Made Shortage of Stores.. 214
  Not Checked by Rainy Weather 531, 548
  Spring, Too Early....... 872
  Time Needed to Build up.. 538
BULK COMB HONEY
  Full Sheets of Foundation Best 470
  Starters for 947
Byer, J. L., the Beeman.... 107

C

Cage (See Queen Cage)
CALIFORNIA
  Association, Chadwick on. 361
  Beekeeping Advisor for... 924
  Effect of Fog............ 51

  Extremes of Temperature in 52, 621
  Inspectors under Civil Service 193
  San Joaquin Valley...109, 263
  Winter Stores Exhausted.. 194
CANDY
  Easy to Make 38
  for Winter Feeding..... 946
Canning with Honey....436, 700
Cans, Honey, High Price... 379
Can This be Done?....... 41 121, 200, 280, 368, 439, 522
CAPPING MELTERS
  Hurt Honey Flavor?..... 869
  Ira D. Bartlett's....... 268
  Used in Winter......... 935
Cappings, Cause of White... 692
Cartoons, Donahey's 199
Catchup to Make 695
CELLAR
  Bees put in Without Flight 48, 126
  Disturbing Bees in 865
  Dr. Miller's Bees Taken from 357
  Furnace Heated for Wintering 791
  Temperature of ..55, 190, 861
  Wintering 1000 Colonies in 675
  Temperature Reading 133
  Under House All Right.. 134
  When to Take Bees out... 261
Change in Freight Rates.... 373
Chocolate Pudding with Honey 202
CITY
  Apiary Profitable........ 319
  Colony Gives Large Returns 865
CLIPPING
  Best Way 458
  Miller, E. S., on 340
Clothes, What to Wear in Beeyards 180, 382, 624
  Alfalfa in Dry Season.... 634
  Alfalfa in the East 273
  Alsike Superior to White.. 787
  in Ontario Looks Fine.... 378
  in Tennessee 291, 376, 464, 521
  Lespedeza 614, 847
  None in Locality........ 462
  of Tennessee, Buchanan on 521
  Value to Bees 631
  Sweet (See Sweet Clover)
  White, Does it Yield Every Year? 788
  White, Length of Bloom.. 631
  (See Sweet Clover)
Cluster, Winter 860
Clustering Out 710
Colonies too Strong for Fall 872
Colony, City, Gives Large Return 865
Color, Effect on Bees 116
COLORADO
  Demonstration Train..... 128
  Honey Crop 707
  Honey Flow Late........ 468
  Honey Market 128
  Late Spring 383
  Prices in 626, 707
  Snowfall in 49
  Winter Losses 383, 469
COMB
  Building 61, 206
  (See Combs)
COMB HONEY
  Board with Slot to Keep Cappings White...... 190
  Bulk, Full Sheets Foundation for 470
  Cartons for............ 945
  Feeding to Fill Sections.. 631
  Few Swarms 253, 336
  Fumigation of.......... 793
  Glassed 674, 855
  Granulation of.......... 383
  Holes in 140
  How Eaten 357
  Immense Equipment Required 357
  Markham's Plan to Fill Outer Sections 275
  Method Similar to Extracted 353
  Never Handled After Sundown 52, 196
  Prices 45 Years Ago..... 673
  Production in City Block.. 865
  Production, Italians vs. Blacks 462
  Production less Attractive. 780
  Production, Three Plans.. 632
  Safe Method of Shipping.. 265
  Supers, Mrs. Frey's...... 254
  to Change to Extracted... .49, 134, 855, 692
  Ventilation of Supers.... 189
  Western as good as any... 472
COMBLESS PACKAGE
  Arrive Starving 917
  Buying of vs. Wintering.. 927
  Exempt from Detention at Ontario 283
  Great Increase in Texas.. 467
  Heavy Losses 626
  Hiving of.............. 365
  in Colorado 468
  in Ontario 192
  in Texas...........197, 550
  Introducing Queens to.... 204
  Leaked Enroute 471
  Pure Stock Only........ 189
  Require Lots of Food.... 548
  Symposium on 172
  vs. Uniting 278
  Why Delayed 833, 836
COMBS
  Care of, During Winter.. 788
  Ever too Old?.......... 205
  Full and Empty......... 286
  Melt Down 782
  of Honey, Weight of..... 55
  Pollen in (See Pollen)
  Shaking Bees from...... 539
  to Clean 788, 853
  to Protect from Moths.... 190
  to Store 708
  (See Comb Building)
Containers, Honey (See Honey Containers)
CONVENTIONS
  Banquets at 59
  California, Northern 135
  California Riverside Club. 924
  Colorado Boulder County Bee Club 128
  Illinois B. A. Give Prizes. 636
  Illinois, Northern, and Southern Wisconsin Beekeepers' Association ... 797
  Illinois State Program.... 875
  Indiana 209
  Iowa Polk Co. Beekeepers' Association 719
  Kansas 209
  Massachusetts ..209, 636, 608
  Minnesota State Program. 877
  Missouri 370
  Montana 209
  National 210
  New Jersey 136
  New York Western Association Program........ 877
  New Zealand National Beekeepers' Association ... 796
  No Place for Beginner's Questions 862
  North Carolina 136
  Ohio 209, 717
  Ontario 47, 876
  Panhandle Association.... 373
  Results at County Meetings 544
  Smoker Fuel Discussed... 199
  State Annual, Schedule... 875
  Tennessee ..195, 377, 464, 622
  Texas 467, 550, 636
  Typical 116
  United Honey Producers.. 282
  Washington State........ 209
  Wisconsin, Northern 142
Cooking Dark Honey for.... 773
COOPERATION
  Benefits from 933
  Byer on 378
  Jager on 58
  Wartime Producers of Massachusetts 555
Cornmeal, Value of 857
County Farm Adviser Movement 361
Covers, Metal, Baldwin on.. 382
CROP REPORTS
  Government, Monthly 874
  Large for 1916.......... 48
  (See Honey Crop)

D

DANDELIONS
  Crane on 359
  Foster on.............. 383
  Miller, C. C., on........ 358
  (See Honey Plants)
DEATHS
  Bertrand, Edward 283
  Danzenbaker, Francis 717
  Hochstein, C. F, ... 370
  Offineer, G. A. 718
  Polhemus, D. C.......283, 288
  Poppleton, O. O...879, 941, 944
  Pouder, Walter S........ 136
  Vandevort, J. 283
Demaree, Swarm Control.... 854
Demuth Winter Packing.... ....842, 941, 944
Denmark, Prices in........ 866
DISEASE
  Bee Paralysis or Isle of Wight 681
  Bees with, Worked on Shares 212
  Caused by Lack of Stores. 869
  Cause of Isle of Wight... 613
  Disappearing, Holtermann 766
  Disappearing. Reported by Byer 704
  Disappearing, Why so Called 855
  Dysentery, Determination of 277
  Dysentery in Ontario.... 287
  in Pennsylvania 219
  in Tennessee 847
  in Trees in Texas........ 926
  Mysterious in Texas...... 468
  or Smelter Smoke?....30. 627
  Paralysis Cured by Good Stores 692
  Sac Brood 691
  Spring Dwindling 277
Distance of Flight (See Flight)
Division Board, What's the Use of 127, 357
Domestic Beekeeper, New Name for Beekeeper's Review 136
DRESS
  for Hot Day 624
  What to Wear in Beeyards 180, 382, 624
Dried Fruits and Vegetables. 615
DRIFTING
  Miller, Dr., on 123
  When Using Winter Cases 375
DRONE
  Cells One Side, Worker the Other 438
  Comb, to Get Rid of..104, 693
DRONES
  and Brood in November.. 213
  Destroyed with Alley Traps 295
  Early in Texas......... 289
  from Laying-workers, Purpose of 345
  in January in Florida.... 198
  Removal of, Did it Cause Trouble? 375
  that Didn't Sting........ 366
  to Keep During September 679
Dummies (See Division Board)
Dysentery (See Disease)

E

Eggs That do not Hatch .455, 533
ELECTRICITY
  for Embedding Foundation 453
  Hatching Queens by...... 39

Elwood, P. H. 673, 675
ENEMIES OF BEES
  Ants Kill Queen 795
  Ants, to Destroy 131, 862
  Birds 545, 837
  in South 837
  Mice, to Outwit 770, 853
  Yellow Jackets 611
Entomology, North Carolina Beekeeping Specialist Appointed 637
ENTRANCE
  Byer on 192, 288
  Condensed Moisture at 928
  Protection for Winter Case 763
  Size of 708
EQUIPMENT
  for Bgeinner 285
  for Extracting House 262
Excluder (See Queen Excluder)
EXHIBIT
  Illinois B. A. Gives Honey 636
  Nebraska State Fair 797
  New Jersey Beekeepers' Association 719, 877
  Tennessee Fairs 873
  Texas 636, 781
Extension Work in the South 46, 57, 289, 545, 876
EXTRACTED HONEY
  Arrangement of Supers 459
  Change from Comb to 49, 134, 358, 855, 692
  Colonies Winter the Best 291
  has Great Future 293
  instead of Comb 941
  Miller, C. C., Changes to 358
  on the Gain 359
  Recommended for Beginners 285
  Shortage of 273
EXTRACTING
  Amount per Day. Byer 783
  Beginners' Lessons 619
  Combs, Full and Empty 286
  Combs to Clean 788, 853
  Experience of Beekeeper's Wife 524
  Frames, Advantages of Shallow 849
  Frames, Shallow, a Nuisance, J. E. Crane 359
  Honey too Thick for 361
  House, Equipment of 262
  House, Riggs', T. J. 441
  Miller, E. S., on 341
  on a Trailer, at Medina 599
  too Close 51, 273
  When to Begin 552
EXTRACTOR
  Necessary 711
  that Came without Crank 366

F

FAIRS
  Featuring Honey at 550
  Minnesota State 876
  Selling at 595
  State, Exhibit at 877
  Tennessee 873
  Texas, Give Exhibits 781
Farm Adviser County Movement 361
FEEDER
  Powell's Floor Board Tin-tray 793
  Wooden, To Make Tight 788
FEEDING
  Back Dark Honey 292
  Back to Fill Sections 631
  by Shoving Comb in an Entrance 358, 452
  Cost of 48
  Candy, Easy Plan 38
  Choosing Sugar for 629
  Easy Method of Filling Combs 295
  Fall, Stewart 528
  in Witner, Candy for 946
  Making Syrup at Outyard 788
  Miller on 773
  Spring, Best Time for 375
  Stimulating in Spring 205
  Sugar, J. L. Byer 871
  Sugar Dry 855
  Syrup Late 861
  Syrup too Thin 101
  Thick Syrup in Cold Weather 193
  Thin Syrup in Spring 180
  Unfinished Sections Late in Fall 860
  vs. Loss of Bees 48
  When to Extract and Feed 629
  Winter. Inside or Outside 787
Fiber Containers, Importance of Using 461
FIELD MEETINGS
  British Columbia 717
  Chicago-Northwestern Beekeepers' Association 637, 719
  Connecticut Beekeepers' Association 639, 719
  Illinois 637
  Massachusetts 636, 719
  Missouri N. W. 637
  New Jersey Beekeepers' Association 797
  New York Beekeepers' Association 636, 719
  Ohio Beekeepers' Association 637, 797
  Pennsylvania 637, 718
  Rhode Island Beekeepers' Association 637, 719
  Tennessee Beekeepers' Association 703
  Toronto Beekeepers' Association 636
  West Virginia Panhandle 636
FIRE
  Bees Tried by 29
  Causes Loss to Beekeeper 797, 877
  in California 780, 869
FLIGHT
  Bees Put in Cellar Without 48, 126
  Byer on 379
  Crane on 196
  Distance of 526, 780
  Depends Upon the Bees 141
  Long Distance to Orange 125
  Miller, C. C., on 190
  Moving in Spring without 861
  of Bees, Length of 948
FLORIDA
  Best Time to Requeen in 706
  Cold Weather in 198, 209, 380
  for Winter, North for Summer. J. J. Wilder 768
  Honey all Sold 198
  Honey Crop and Prices 705, 783
  Honey Prospects 517
  Jobbers Ship Honey to 381
  Locations, Relative Value of 546
  New Sources of Honey in 50
  Place to Live 838
  Starving Bees 545
  vs. Indiana 836
Follower, What's the Use of 127
FOOD
  Administration Pledge Card 943
  Canning with Honey 436, 700
  Cornmeal, Value of 857
  Drying Fruits and Vegetables 615
  Furnished by Garden 362
  Honey Cinnamon Rolls 616
  Honey for Diet 856
  Jellies, Conserves and Catchup Recipes 695
  Recipes 202, 695, 775
  Report of Hoover's Talk 774
  Thanksgiving Menu 857
  To Paraffin Jelly 857
Food Uniform 942
  Value of Honey Compared with Karo 45
  Value of Low Protein Diet 856
  Waste of 454
FOUL BROOD
  Eradication in Texas, Jackson Appointed for 870
  Eradication, Texas Raises $5000 550
  Examining for 193
  Hard to Eradicate, Easy to Cure 551
  Law (See Law)
  Treatment for Both Types 62
  Treatment 786
FOUL BROOD, AMERICAN
  and European Compared 378
  Appears in East 547
  are Combs Safe that have not Contained Brood 134
  Carniolans Nearly Immune 675
  Cured, Hetherington and Elwood 673
  Extracting Combs Infected 860
  Feeding Back Honey 853
  Florida 706
  or European Which Worst? 553
  Swapping Combs 940
  Treatment, McEvoy Plan 854
  Treatment in Fall 789, 861
FOUL BROOD, EUROPEAN
  Attack sealed Larvae 357
  Buy Bees in Localities with 528
  Danger from Diseased Comb 526
  Entirely Eradicated 473
  Harvey's Treatment 525
  Letting Bees Clean up 45
  Miller Replies to Holtermann 612
  Prevention of 527
  Quarantined 549
  Spread of 48, 527, 691
  to Cure. E. S. and C. C. Miller 692
Foul Brood Law (See Law)
FOUNDATION
  Bees Drawing out 206
  Electric Imbedder for 453
  Fastener, Markham's 351
  Full Sheets for Bulk Comb Honey 470
  Full Sheets in Sections 452
  Imbedding Wires in 260
  Medium Brood makes Better Combs 125
  Odor of 273
  Splints to Support 205
  Value of During Honey Flow 621
FRAMES
  Bottom Bar, New Shape 64
  Bottom Bars too Weak 700, 855
  Danzenbaker, Standard Extractor for 861
  Nailing 257
  Right Spacing 787, 788
  Shallow or Deep for Extracting? 359, 849
  Spaced or Loose Hanging 48, 63, 189
  Spacing, Miller, C. C., on 189, 272
  Spacing, Wide vs. Narrow 119, 123, 126
  Wide Spacing for Swarm Control 186
Freeze in Texas Disastrous 380
  Freight Rates 373
FRUIT
  Amount Greater Near Bees 787
  and Bees Together 332, 865
  Canned in Honey 443
  Destroyed by Bees 711
  Growers pay $5.00 a colony 433
  Salad with Honey 202

G

Garden to Furnish Food 362
Gloves, Worn by Grace Allen 291
GOVERNMENT
  Crop Report Monthly 874
  Estimate on Condition and Losses 461
  Extension Work 460, 636
  Extension Work, Annual School in Massachusetts 555
GRANULATED HONEY
  do Bees Carry to Entrances 141

  How to Extract 374
GRANULATION
  Depends on Levulose and Dextrose 131
  Depends on Ripeness 45
  Mangrove Subject to 131
  of Comb Honey 383
  Sage not Subject to 125
  Time and Degree of 212
Greenhouse Mating Experiments 41, 121, 200, 280, 368

H

Ham Baked with Honey 202
"Happy: the Life of a Bee" Contains Mistakes 692
Hellum, C. W., Experience of 135
HIVE
  and Super, Plan to Pry Apart 949
  Applicable in South. Webb 689
  Byer Uses 676
  Damp Inside 861
  Different Parts of, Explained 132
  Double-walled in California 125
  Eight-frame Preferred 102
  Interior of 206
  Jumbo, Preferred by Byer 678
  Large, Used by Byer 47
  Large vs. Small 944
  Long Idea 708
  Management Differs with Size. Byer 676, 677
  Painting Bottoms of 346
  Shade. G. M. Doolittle 844
  Space under Bottom-bars 189
  Twelve-frame. Chadwick 780
  (See Box Hive)
HIVES
  Deeper Rather than Wider 296
  Disinfecting 63
  Great Variety of, in California 51
  Style of. P. C. Chadwick 869
  Two-story for Swarm Control 189, 204
HONEY
  Amount Handled in Carlots 551
  Analysis of 382
  Bartlett's Plan for Taking off 179
  Blue-curl, coarse 547
  Boosting Production of 373
  Borrowing 631
  Bottling, Foster on 627
  Bottles, Standard 196
  Candied in Tank 714, 772, 791
  Cans, High Price 379
  Cans, 60-lb 191
  Cinnamon Rolls 616
  Color Grows Lighter Further North 612
  Colorado, all sold 929
  Compared with Karo 45
  Compared with Sugar in Food Value 693
  Containers, Fiber for 461
  Containers, Paper 378, 716
  Containers, Problem of 551
  Containers, Vinegar-barrels Unsafe 867
  Dark, Does Public Like? 864
  Dark, Tons Used for Cooking 773
  Demand Good 287
  Evaporates Better in Shallow Tanks 275
  Extracted or Comb? 49, 134, 692, 855
  Extracted, Shortage of 273
  Extracted when Partly Unsealed 795
  Flavor. Buchanan, J. M. 847
  Flavor, Comb and Extracted. Root, E. R. 630
  Foam on Top of 205
  Food Value of 686, 856
  Food Value Compared with Karo 45
  for Baking Ham 202
  for Diet 856
  for Sweetening 940
  Frothing of 945
  Fruit Salad 202
  Good Demand in Colorado 49
  Gov't Advises Substituting for Sugar 797
  Granulated (see Granulated)
  Grevalia 700
  Harvest, Beginner's Lessons 539
  Heated to 130 Degrees for Heating when Bottling 927
    Nine Hours 214
  house and Hives, Homemade 866
  Hundred Carloads Bottled 48
  in Texas, Consumed at Home 702
  Large Return from One Colony 865
  Mangrove Granulates 131
  Must be Well Mixed before Bottling 131
  no Danger of too much in Spring 462
  Not Being Purchased by Gov't 797
  Paper Bottles for 716
  Paper Pails for 378
  Poor Grades Hurting Market 783
  Preparing Barrels for 771
  Producers', Western 515
  Production, Horner on 516
  Quality vs. Quantity, by A. C. Miller 600
  Recipes 202, 775
  Record Gain for Seven Days 949
  Removal from Hive 675, 685
  Results of Leaving too Long on Hive 789
  Sage Never Granulates 125
  Shipped as Before the War 877
  60-lb. in Ontario 191
  Southern, to Improve 538
  Substituted for Sugar 692, 797
  Supplies World Demand for Sweets 924
  to Estimate Crop of Each Colony 613
  Too Much Air Pumped in 862
  Too Thick to Extract 361
  Used in Canning 436, 700
  Used More and More for Cooking 276
  Vinegar to Make 860
  Well-balanced Menu 274
  Why Demand is Greater in Europe 773
  Why Minerals in, are Valuable 61
  Winter Stores 693, 771
HONEY CROP
  at Marengo, Ill. 772
  Canada, Byer 704
  Colorado 707
  Estimates, Government 461
  Florida 705, 783
  from Colonies of Varying Strength 552
  Gov't Monthly Report 874
  New York 719
  Percentages of Each Kind Produced 52
  Relative Amount Extracted and Comb 614
  Reports on 371, 372
  Sold 37
  Tennessee 785, 847
  and Prices, Texas 289, 550, 781
  to Estimate for Each Colony 613
  to Increase. Reference to Bulletin 718
  Vermont 691, 771
HONEY DEW
  from Various Sources 767
  in Vermont 691
  of Fair Quality 767
HONEY FLOW
  Bad Day Not Loss 621
  Late in Colorado 468
  Management Before 538
  Management During 539
  Need of Rousing Colonies at Start 624
  Preparations for in Texas 129
  Signs of Waning 552
  Value of Fdn. During 621
HONEY-HOUSE
  Concrete 441
  Equipment of 262
HONEY-MARKET
  Chadwick on 361
  Colorado 128, 707
  Hurt by Poor Grades 683
  South 545, 705
  Texas 289, 550
HONEY-PLANTS
  Aster Honey for Winter 711, 789
  Basswood Fails Often 552
  Basswood in Florida 50
  Black Locust 374
  Black Mangrove Damaged by Frost 292
  Butterfly Weed, Poor 784
  Buttonwood 130
  Clovers (see Clover)
  Cocoanut Palm 50
  Conditions of, South 546
  Dandelion Honey in Ontario 466
  Dandelion Honey in Vermont 533
  Dandelion, Loved and Hated 252
  Dandelion Yields Much Honey 386, 634
  Eucalypts, Frozen 198
  Hawaiian Algaroba 23
  Lovell's Map of U. S. 452
  Mangrove 381
  Oranges in California 124
  Pennyroyal Injured by Freeze 292
  Pepper, Blooms Every Month 125
  Sage Never Granulates 125
  Scrub Palmetto 381
  Sourweed 773
  Texas, Condition of 925
  Wild Sunflower 140
Honey-Producers' Exchange, Inter-Mountain 707
HONEY PROSPECTS
  Colorado 626
  Florida 547
  General. Editors 555, 635, 636
  Ontario 624
  Tennessee 544
  Texas 549, 625
Hybrids as Honey-gatherers 708

I

IMBEDDING
  Wires with Electricity from a Ford 936
  Wires with City Current 937
INCREASE
  Artificial 45 Years Ago 673
  in September 938
  Instantaneous 450
  vs. Buying Bees 55, 189
Indiana Needs More Inspectors 138
INSPECTION
  Described by Beekeeper's Wife 604
  Fund to be Cut in Texas 468
  Kansas Fund $5000 370
  Law, New, in Iowa 370
  Michigan Fund $1500 460
  Michigan Obtains Inspector Kindig 370
  Michigan Progresses 637
  of Bees, also Man 273
  Ohio 210
INSPECTORS
  California, under Civil Service 193
  Coercion vs. Education 270
  Kindig of Indiana Goes to Michigan 370
  More Needed in Indiana 138
  Necessary to Wash Hands 126

  New for Santa Clara County 136
  Qualifications for 554
  Report for Tennessee 195
  Wright W. D. of New York 912
Inter-Mountain Honey-Producers' Exchange 707
INTRODUCING
  Any Plan O. K. in Honey-flow 295
  Honey Method 939
  Honey Method, Grace Allen on 291
  Honey Methods, Baldwin on 292, 381
  Honey Method in Evening 189
  Queenless too Long for.. 679
  Smoke Method 631
  to Laying Workers 278
  to Nucleus 134
  Virgins Instead of Cells.. 39
IOWA
  Bulletin 926
  Foul-brood Law......... 370
  Inspector Millen in...... 136
  Mating not Later than Oct. 15 in................ 709
  Wintering in Dugouts.... 759
Isle of Wight (see Disease)
ITALIANS
  How They Came to This Country 111
  vs. Blacks for Comb Honey 462

J

Jager, Francis, Deputy Commissioner to American Red Cross in Serbia... 796
James, N. W., Experience of. 100
Jelly, to Cover 773
Jellies and Conserves, to Make 695
Jumbo (see Hive)

K

Kansas Inspection Fund $5000 370
Karo, Value Compared with Honey 45
Kentucky, Warren County Association 928

L

Labels to Stick on Tin...... 861
Larvae in Cells 208
LAW
  Bees Close to Roads in Illinois 375
  Bees Ordered Out of Town 876
  Federal Quarantine...... 124
  Horse Stung 787
  in Texas 129
  in Michigan Prohibits Box Hives 460
  Iowa 370
  May Compel Moving Bees. 629
  New, in Texas.......... 289
  Texas Experimental Apiary Bill 379
LAYING WORKER
  Can Not be Lost........ 357
  Colonies, to Introduce Queens 278
  Drones, Purpose of...... 345
  Murray's Plan for....... 918
  Shallard's Plan for...... 61
  to Avoid 621
Lespedeza (see Clover)
Liquefying Honey in Tanks 714, 772, 791
Literature, Bee, Value of.... 471
Loafers, How Eliminate?.554, 710
LOCATION
  Factors Vary in Florida and Indiana 836
  at Manitoba 761
  Near Lake is Poor....... 554
  Relative Value of, Florida. 546
  South Australia 718
  Tennessee 852
  Utah, Good 688
Long Idea Hive (see Hive)

M

MARKETING
  Discussed in Convention.. 56
  Foster on 288
  Reports, Government 460
MARYLAND
  Beemen 100
  Winter Case Little Used.. 794
MATING
  Greenhouse Experiments.. 41
  121, 200, 280, 368, 439, 522
  in Iowa, Not Later than Oct. 15. 709
Meal, Bees Use for Pollen 380, 547
Menu, Planning of 274
Menu, Thanksgiving........ 857
Methods, Applicable in South Webb 689
Mice (see Enemies of Bees)
MICHIGAN
  Inspection Progresses 637
  Loses Inspector Millen.... 136
  Prohibits Box Hives..... 460
Milk Cans for Carrying Honey 945
Millen, F. Eric, in Iowa.... 136
Minnesota Beekeeping Statistics 283
Minnesota State Convention. 875, 877
MOTH
  Destructive in Texas..... 53
  Eggs Carried by Bees.532, 614
  Eggs Kiled in Winter.... 134
  In Florida a Menace..... 784
  Napthalene vs. Carbon Bisulphide 198
  Texas 626
  to Protect Combs from.... 190
MOTION PICTURES
  in California 261
  of Apiary Work in West Virginia 863
Motoring in California. W. A. Pryal 848
MOVING
  Bees, as Sideliner's Catastrophe 841
  Bees by Motor Truck.... 846
  Bees During Winter...... 278
  Bees Fifty Yards 205
  for Swamp Forage 629
  in Spring Without Flight. 861
  Miller, E. S., on......... 340
  Root, E. R., on 630
  Severin, F. J., on....... 347
Moving Pictures of Apiary Work 863

N

Nailing Supplies, Trouble in. 117
National Association, Jager on 35
NORTH CAROLINA
  Bee Club 460
  Extension Work in 46
  State Association 195
  Wintering in 287, 761
NUCLEI
  5-frame, Wintering 193
  Regular-sized Combs for.. 523
  Small, Don't Fuss with... 124
  Starting from 187
  to Prevent Robbing 523
  to Retain Bees in........ 523
  United in Fall 861
  When to Introduce to.... 134
Nurses, How Long Bees Act as 272

O

Odor of Swarming Bees.... 613
Ohio, Inspection 210
ONTARIO
  Honey Prospects 547
  Old-fashioned Winter..... 191
  Spring Loss 625
  Weather Conditions ..465, 624
  Wintering in........... 377
ORCHARD
  and the Bee 707
  Orchard, Baldridge's 17-acre 333
  Better Pollinated Nearest Apiary 787
Oregon, New Era for Beekeeping 294
OUT-APIARY
  Auto and Trailer........ 58
  Automobile for.......... 363
  Expenses, Holtermann on. 105
  Management, Williams on. 20
Overstocking, Chadwick on.. 361

P

Painting Hive-bottoms...... 346
Paper Packages for Honey.. 378
Paralysis (see Disease)
Pasturage, Artificial 709
Patents, 1200 Issued to Beekeepers 459
Pettit Resigns as Provincial Apiarist 797
POEMS
  "April" 293
  "April Time in Dixie"... 291
  "Christmas in Dixie"... 950
  "Dream and Prayer".... 873
  Knitting 632
  May 384
  Song of the Suburbs..... 138
  Stuttered Stories........ 618
  "The Beekeeper Answers" 470
  "The Close of the Year".. 928
  "Things I Love"....... 785
  to J. M. Davis.......... 697
  "War in the Spring".... 212
  Winter and the New Year. 61
Policeman Who is a Beekeeper 360
POLLEN
  Bees Bother Farmers for Meal 380, 547
  Clogged Combs 190
  Early, Sources of........ 374
  Gathering, Grace Allen on 291
  Has it Mineral Elements of Honey? 855
  in Cells, Root, H. H...... 207
  in Combs, to Get Rid of... 949
  in Shallow-frame Honey.. 138
  Removal from Combs.... ....272, 278, 709
  Substitutes 277, 357
  Substitutes, Allen Latham on 452
  Why Valuable 771
POLLINATION
  of Orchards 332, 707, 787
  of Prune 194
Poppleton, O. O., Biography. 878
Poultry and Bee Demonstration Train 464
Pound of Bees, How Many Quarts in............ 55
Pound Packages (see Combless Packages)........ 172
PRICES
  Byer, J. L., on.......466, 872
  Baldwin, E. G.......... 874
  Boosted by Apple Shortage 718
  Chadwick, P. C. 869
  Colorado 626,707
  Comb Honey, C. C. Miller. 855
  Comb Honey Forty-five Years Ago........... 673
  Crop Committees 287
  Cutting on Honey....... 56
  Denmark 866
  Don't Overcharge Consumer 595
  Dr. Miller on........... 941
  Fancy 135
  First Seller Sets Low Price 602, 610
  Florida 705
  40 or 50 Years Ago..... 771
  Good One Justifiable.... 705
  Increase Necessary....... 610
  Kept Down by Warm Weather 133
  Maintaining 275
  New Crop, by Byer...... 625
  Cans, Great Increase in.. 379

  of Wax, Stability of...... 184
  Ontario, Byer 782
  Recommended by Western N. Y. Asso'n. 718
  Root, E. R., on......635, 636
  Supplies and Honey...... 383
  Selling at Last Year's.... 853
  Standardizing 196
  Texas 625
  Too High, Holtermann... 591
  to be High............ 383
  What is fair? Byer.... 549
Profits in Bees 32
Propolis to Remove.193, 474, 855
Protein, Value in Diet..... 856
"Put-up Plan" of Swarm Control, a Variation of. 863

Q

Quadruple Winter Case 792
QUEEN
  and Worker, to Tell Apart 375
  Breeders Delayed by Cold Weather 460, 550
  Breeder, Fooshe Makes Good 607
  Cage, a Handy 715
  Cage on Side of Hive.... 183
  Cage Quickly Made 867
  Cage, Will Bees Feed Thru? 205
  Cramps 623
  Importance of Good...... 539
  Italian Introduced, Strain Unchanged 787
  Mortality in Shipping.... 875
  Stays Below Better if Combs are Crosswise.. 374
  to Introduce (see Introducing)
  to Replace (see Requeening)
  When to Introduce to Nucleus 134
  Whose Eggs Never Hatched 455, 533
  With Dent 629
  (see Queens)
QUEEN-CELLS
  Aeppler's Plan 93
  Value of Artificial 629
  Builders, Why Dequeen.. 186
  on Comb Lying Flat..... 123
  Supersedure and Swarming. Difference 630
  Will Bees Start them Above an Excluder? C. C. Miller 692
  With Dead Tenants...... 526
  Why Did the Bees Build?. 387
QUEEN EXCLUDERS
  do not Retard Storing.... 789
  None Needed 104
  Queen-cells Above?...... 692
  When Necessary 286, 295
Queenlessness, Test for. Doolittle 679
Queenless Too Long for Introducing 679
QUEEN-REARING
  Aeppler on 93
  Best Time During Flow.. 693
  Colored Cell Cups, to Tell Age 187
  no Jelly in Grafting 187
  Out-apiary 715
  Troubles, Editor's 833
  Troubles of Southern Breeders 914, 920
  Under Swarming Impulse. 194
QUEENS
  Clipped that Lived Long.. 356
  Clipping Without Catching 546, 613, 622
  Factor in Choosing...... 853
  Doolittle on Selection of.. 603
  Hatched Electrically 39
  Have a Supply on Hand.. 383
  Miller, C. C., on Selection of 436
  Not Always Breed True.. 788
  Southern as Hardy as Northern 161
  Stop Laying After Flow.. 711
  Superseded During Honeyflow 347
  Will Bees Feed thru Cage? 205
  Young, Influence on Swarming 354, 384
  (see Queens)
  (see Requeening)

R

RAINFALL
  in Tennessee Ample...376, 544
  Texas ..129, 197, 290, 379, 925
Rats, Poisoning of......... 193
Rauchfuss, Herman & Son.. 276
RECORD
  book Abandoned by Chadwick 547
  Chadwick's Scale Colony.. 621
  Keeping, Mackay's Plan.. 918
  Recipes.... 202, 616, 695, 775
Red Clover (see Clover)
REQUEENING
  Best Time for...... 374, 706
  Conditions Unfavorable at Redlands 780
  to Build up Colonies..... 278
  (see Queens)
Rhode Island Association... 282
ROBBING
  Beginners' Lessons, H. H. Root 699
  Differs from Borrowing.. 631
  Economy of Nature's. 682, 853
  Feed troughs 860
  from their Own Hives.... 772
  of Nuclei, to Prevent.... 523
  Prevented by Empty Super Below 866
  to Dispose of Bad Case of. 552
  to Distinguish from Play-spells 375
Rye Flour a Substitute for Pollen 357

S

Sac Brood (see Disease)
Sage Honey Never Granulates 125
Sandwich Islands Honey Co. 839
San Joaquin Valley.....109, 263
SCHOOLS, BEEKEEPING IN
  Massachusetts Agricultural College 608
  Ontario Agricultural College 136
  Texas Agricultural College. 59, 870
  22 Colleges 460
Sechrist, E. L., Assistant to Phillips 370
SECTIONS
  Feeding Back to Fill..... 631
  Fdn. in Full Sheets for... 452
  Folder, Markham's 351
  folding Record.......... 357
  Glassed 674, 855
  Shallow Frames at Sides of 861
  Starting Bees to Work in. 440
  Steam for Dampening 270
  to Get Bees Started in. Crane 771
  Unfinished, to Feed in Fall 860
SELLING
  A Few Don'ts. H. H. Root 778
  A Little Saleslady 597
  A Parable of Overcharging 596
  Ask Fair Price 595
  At Country Fair 595
  at Last Year's Prices.... 853
  by Contract 701
  Chadwick on 361
  Cost of 49
  Cole, E. M., on 130
  Crop of 46,000 Pounds... 196
  Disposing of Off Grades.. 601
  Eliminate the Middleman.. 594
  Fording to Consumers..49, 596
  Girls' Experience........ 112
  in England 35
  Locally vs. Abroad...... 45
  on Commission 552
  Requires Fair Grading.... 593
  Roadside 13
  Roadside, Dr. Miller on,.. 358
  Small Chance for Co-operative Selling 593
  Sunday 605
  Trades Honey for Grain.. 595
Shade for Hives. Doolittle, G. M., ... 844
Shaken Swarm Perfected... 352
SHIPPING
  Bees from Texas to Other States for the Season.. 702
  Comb Honey, Safe Method. 265
  Honey as Before the War. 877
  Queens, Mortality in..... 875
Sideliners, Suggestions for.. 360
Smelter Case, Final Decision on 373
Smelter Smoke or Disease? 30, 627
Smoke Stirs up Bees 205
Smoke, Sweetened Water Instead of 944
Snowfall, Heavy in North Texas 290
SOUTH
  Beekeeping Part of Year in 836
  Factors Necessary for Wintering in 847
  Wintering in 133, 550, 623, 703, 769
  Winter Packing for...127, 873
Spacing Frames (see Frames)
Spencer, R. M., Insane 282
SPRAYING
  Crane on 453
  Destructive 335, 684
  Felt, E. P., on 472
  Full Bloom in Texas..... 379
SPRING
  Dwindling, What is It?... 277
  Loss of Bees, Ontario.... 625
  Dr. Miller on........... 255
  Starving 621
STARVING
  Florida 545
  in Texas 926
  Spring 621
STINGS
  from Swarming Bees..... 713
  to Prevent 709
STORES
  Importance of Good...... 847
  Incentive for Breeding... 780
  Necessary, Chadwick..... 621
Storm Damages Apiary in Jamaica 876
Subscriptions Stopped on Expirations 199
SUGAR
  Cane and Beet 773
  Difficulty in Purchasing.. 941
  Dirty Impossible to Buy.. 928
  Distribution, Possible Method of 875
  $8.75 a Hundred........ 928
  Fed Dry 855
  Feeding. Byer 871
  Gov't Advises Substituting Honey 797
  Increased Consumption... 693
  Planning Meals Without.. 942
  Substitute Honey for..... 692
  to Choose for Feeding..629, 630
  Trust has Peculiar Advantages 786
  Value for Winter Stores.. 871
Sumthin wot i no 118
SUPERS
  Bees not Working in.... 462
  Care of, After Extracting. 610
  Comb Honey, When Put On? 554
  Empty, Above or Below?. 866
  Extracting, When Put on? 554
  Smoking Bees out........ 940
  Shallow vs. Full Depth.940, 944
  to get Bees Started in. Crane. 771
  to Leave on Hive in Winter, in Florida?....... 787
  Yoder Bumps Bees Out... 611

SUPERSEDING
- During Honey-flow...... 347
- Not to be Depended on... 547
- or Swarming 183, 630
- Quite Common 189

Superstitions in Beekeeping. 344

SUPPLIES
- and Honey, Prices...... 383
- Buy Early 43

SWARM
- Buying to Get a Start.... 365
- -catcher, Hamelberg's.... 444
- Galore, What to Do with.. 446
- Hived on Old Stand..... 104
- Hiving, Miller, C. C., on.. 204
- Shaken Plan Perfected... 352
- to Catch, Old Hive Best.. 633
- to Find the Hive it came from 449

SWARM CONTROL
- and Prevention, Chadwick. 530
- Bartlett's Method 179
- Christesnen's Plan for.... 387
- Comb-honey Production... 253
- Crane on.............. 786
- Demaree on 854
- Elwood on 675
- Extracted Honey.... 459, 472
- Give Room Before Needed 531
- More Ventilation 531
- Pride Plan 451
- "Put Up Plan" 863
- Rankin's Plan for....... 388
- Screened Ventilation Under Hive 445
- Two Stories for......... 189
- Variation of "Put up Plan" 863
- Wide Spacing for 186, 531
- Wright's Method 913
- Young or Old Brood Below 613

SWARMING
- Because Colony too Strong 278
- Bees' Odor............. 613
- Bees, Stings from........ 713
- Described by Chadwick... 606
- Differences in Conditions. 387
- Discouraged by Daubing Loafers 528
- Encouraging and Discouraging 56
- Experience Told by Beekeeper's Wife 441
- Influence of Young Queens 384
- in pSite of Anything..... 119
- in Texas, Difference 53
- in Winter 763
- Natural does not Pay.... 124
- or Superseding 183, 630
- Should be Reduced. Grace Allen 696
- to Separate Several Swarms 629
- Unlimited in Tennessee 696, 855

SWEET CLOVER
- and Alsike for Pasturage. 709
- Caution in Cutting...... 612
- for Artificial Pasturage... 709
- Honey, Flavor 847
- in Middle West 513
- in Texas 140, 290
- Miller, C. C., Boosts..... 532
- to Replace Winter-Killed Alfalfa 718
- White, First Year Sown.. 385
- with Wheat or Oats. Frank Coverdale 845

Sweet Potatoe , Candied 202

SYRUP
- Easy Method of Filling Combs with 295
- Fed Late 711, 861
- Made in Outyard........ 688
- or Inferior Honey for Stores 711
- Thick or Thin 180, 193
- too Thin in the Fall..... 101

T

Tanks to Liquefy Honey in.. ... ...714, 772, 791

Tar Paper, Does it Irritate **Bees?** **133**

TENNESSEE
- Demonstration Train..... 326
- Extension Work in...... 46
- Great Strides in........ 267
- Honey Prospects 544
- Inspector's Report 195
- Location 852
- Rainfall 376, 544
- Swarming Unlimited ..696, 855
- Wintering in 195, 291
- Winter Packing for..... 376

TEXAS
- Beekeepers' Asso'n Affiliated with Texas Honey Producers' Asso'n 780
- Beekeepers' Item........ 59
- Beekeeping not Appreciated in 467
- Conditions in 780, 925
- Experimental Apiary.... ... .129, 197, 379
- Extension Work in 289
- Foul-brood Law 129, 289
- Honey Consumed at Home 702
- Honey Crop and Prices... ... .289, 550, 781
- Honey-flow, Preparations for 129
- Honey Prospects.467, 625, 649
- How Conditions are Different in 53
- Inspection Fund to be Cut. 468
- Moth in 626
- Rainfall 129, 197, 290, 379
- Snowful Heavy 290
- Shipping Bees to Other States for the Season.. 702
- Spraying During Full Bloom 379
- Three Honey-producing Sections in 197
- Undeveloped Territory in.. 53
- Wintering in 757

Thanksgiving Menu 857

Tomato Catchup, to Make... 695

TRANSFERRING
- Best Time for........... 293
- from Box Hives 364, 626
- from Trees 364

U

UNITING
- Do Bees Go Back?....... 709
- Like Thinning Fruit..... 51
- Newspaper plan..772, 924, 941
- Nuclei in Fall 861
- Two Weak Colonies...... 278
- Two Plans 788
- vs. Combless Package..... 278

Utah, Location in 688

V

Veil, Sting-proof........... 139

VENTILATION
- for Wintering 789
- of Hive. Paddock...... 782
- of Hive by Raising Cover. Chadwick, P. C. 700
- of Hive by Raising Cover. Miller, C. C. 854, 855
- Screen Under Hive...... 445

Veteran, Old 187

VINEGAR
- -barrels Unsafe for Honey. 867
- from Honey 860

Virginia, Progress of Beekeeping in 185

VIRGINS
- Introduced Instead of Cells 39
- Many Swarms Lost on Virgin's Flight........ 613
- Victorious over Laying Queens 452

W

WAR
- Affects Cornell University. 877
- Beekeepers at the Front... 929
- Bees and Boys........... 449
- Causes Incendiary Fires in California 780, 869
- Causes Many to Read Bible 773
- Echoes from 199
- its Bearing on Food Question 774
- Letter to Minnesota Beekeepers. Prof. Frances Jager 876
- Prices in Denmark....... 866
- (see Food Uniform)
- (see Food Adminstration Pledge Cards)
- Suggestion to Care for Soldiers' Apiaries.....796, 869
- Teaching Beekeeping to Maimed Soldiers ...796, 797
- -time Co-operation in Massachusetts 555

WATER
- Amount Needed in 25-Colony Apiary............ 386
- Drip-board for Bees..... 294
- Necessity of 104
- Provided by Candle-wick.. 385
- Trough, to Keep Bees Away from........... 375

WAX
- Clarifying 945
- Darkened in Rendering... 134
- Fire Put Out With Salt.. 950
- Quantity of Honey to Make One Pound of......... 631
- Rendering Discussed at Convention 57
- Stability of Prices....... 184

WEATHER CONDITIONS
- Heat Wave in California.. 621
- Ontario 624
- Cornstalk Shelter from.... 104

Weight of Comb of Honey.. 55

White Clover (see Clover)

Wind: Protection From.... 945

WINTER
- Beekeepers Work in...... 133
- Better Protection Needed in Colorado.......... 469
- Cold in Ontario......... 287
- do Bees Hibernate?...... 133
- Effect of Mold on Combs.. 374
- Feeding, Candy for...... 946
- in Colroado Severe....... 128
- Losses, Colorado..... 383, 469
- Losses, Reports on 283, 371, 372
- Old-fashioned in Ontario.. 191
- Severe in Tennessee...... 376
- Steady Cold Easier on the Bees 385

WINTER-CASE
- Alighting-board a Nuisance 287
- Beginner's Lessons 858
- Colorado 929
- Cost of 929
- Double 192
- Drifting of Bees in...... 375
- Entrance Protection...... 763
- for Tennessee........... 46
- Gordon A. Dye's......... 203
- Little Used in Maryland.. 794
- No Extra Expense....... 842
- Ontario 926
- Quadruple or Double.... 792
- Root, C. H. 181
- Store-boxes for.......... 267
- (see Wintering Demuths's Plan)
- Used All the Year...... 794

Winter Cluster (see Wintering)

WINTERING
- Bees Dying on Snow..... 134
- Beginner's Lessons....... 858
- Bottom Packing Unnecessary 771
- Cellar, 1000 Colonies..... 675
- Cellar or Outdoors....... 755
- Cluster, Description of.... 860
- Cluster Varies According to Temperature 275
- Contracting Brood-chamber 861
- Demuth's plan...921, 941, 944
- Double-walled Hives in California 125
- Disturbing Bees in Cellar. 865
- Extracted-honey Colonies Best 294
- Foster on............... 288

  Good Reports in Ontario.. 377
  Importance of Good Stores 755
  in Above-ground Repository 791
  in Double or Quadruple Cases 792
  in Furnace-heated Cellar.. 791
  in North Carolina....... 761
  in the South.........623, 703
  in South, Buchanan.... 769
  in South, Factors Necessary 847
  in Tennessee 195
  in Texas, Extra Packing. Paddock 757
  in Two-story Hives...... 273
  in Western Iowa, in Dugouts 759
  in Wrapped Paper and Burlap 762
  Large Caps for 255
  Letters from Beekeeper's Wife 845
  Miller, C. C., on......... 854
  Necessities for.......... 773
  Nuclei, five-frame........ 193
  Outdoors, how Far North. 466
  Out of Doors Without a Hive 944
  Packing for Outdoor..... 710
  Poorly in North Carolina.. 287
  Problem in South....133, 550
  Protection from Wind.... 945
  Report, Tennessee 291
  Sheltered Location Required 711
  Sub-earth Ventilators..... 789
  Super Left on for........ 787
  Temperature of Cellar.... 861
WINTER PACKING
  Below, Unnecessary...... 771
  Cheap 842
  Different Authorities..... .... 710, 753, 755
  Early or Late 48
  Forest Leaves for........ 949
  in South................ 873
  in Tennessee 376
  the Year around......... 272
  too Much 57
WINTER STORES
  Amount Needed in Spring. 277
  Aster Honey for 711, 789
  Beginner's Lessons 778
  Consumption of 46
  Exhausted in California.. 194
  Faulty 138
  Frames Loose vs. Spaced.. 48
  Honey Preferable to Syrup 693, 771
  in South 871
  Shortage of Because of Brood-rearing 214
  Sugar Syrup or Inferior Honey 711
  Thickness of Syrup...... 711
  to Judge 34
  Unsealed Aster, Bad..... 711
  Value of Sugar.J. L. Byer 871
Winter Swarming 763
WIRING
  Byington's Plan 62
  Frames 259
  Vertically and Horizontally 63

Y

Yellow-jackets (see Enemies of Bees)

EDITORIAL

ADVERTISING
  Combless Packages...... 11
  Honey, National 10, 169
Alfalfa (see **Honey-plants**)
Algarrobas and Royal Palm, Cover Picture......... 832
APPROPRIATIONS
  Government 9, 171
Automobiles for Bee-yard Work 251
BEE LITERATURE
  Book, "1000 Answers —" Miller, C. C. 331
  Book, "New Beekeeping," Dadant, C. P. 331
  Bulletins, Canadian, Reviewed 751
  Bulletin, Gov't, on Sac Brood 250
BEES
  Necessary for Pollination of Alfalfa 170
  vs. Farming 251
BEEKEEPER
  Association, Canadian.... 752
  Convention Considers War Problems 330
  Outlook for 9, 249, 251
BEEKEEPING
  as an Avocation 12, 251
  Time Saved by Outside Diagnosis 510, 672
Breeder (see Queen-breeder)
Breeding Pollen in Spring for 829
BROOD
  Above Excluder for Swarm Control 591
  Equalizing in Spring.... 590
  Hatching Good Colony Booster 511
  Hatching over Excluders.. 590
  in Pound Packages 672
  Weight of Sealed 672
Brood-rearing Fall (Holtermann) 171
Buckwheat (see Honey-plants)
Cellar Wintering or Outdoor. 750
Clover (see Honey-plants)
Cluster (see Winter Cluster)
COMB HONEY
  by Mail Unsafe 830
  Granulates and Lowers Market 432
  or Extracted 91, 251, 329
  Prices 432
  Production Demanded by Sugar Shortage 331
  vs. Extracted.91, 251, 329, 430
COMBLESS PACKAGES
  Advertising 11
  Delayed Shipments....... 592
  Demand Large.......... 331
  How to Ship............ 430
  Much Safer than one with Comb 672
CONVENTIONS
  Dates 832
  National Announcement.. 12
  National Speakers 89
Co-operation in Prices at Ontario 89
Dandelion (see Honey-plants)
Demuth Wintering Method.. ....830, 831
Diagnosing Colonies from Outside 510, 672
DISEASE
  Foul-brood Cures, Caution. 751
Foul Brood, European, Treatment 91
  Isle of Wight, or Disappearing 590, 671
  Law for Foul Brood in Canada 752
  Nosema Apis. Beuhne, F. R. 330
  Sac Brood, Description from Bulletin 250
ENTRANCE
  Diagnosis 510, 672
  Long Grass Near........ 90
Excluder (see Queen-excluder)
Extracted Honey or Comb... ....91, 251, 329, 430
Extracting Frames, Shallow vs. Deep 251
Feeding Sugar, Shortage for. 829
Foul Brood (see Disease)
Frames Deep or Shallow for Extracting? 251
GLEANINGS
  Requirements of Shippers. 909
  Subscription Policy 169
  the New Monthly, ...11, 89
GOVERNMENT
  Advises Trial of Grimm Alfalfa 511
  Appropriations 9, 171
  Bulletin, Sac Brood...... 250
  Control of Sugar........ 749
  Market News Service 432
Granulation of Comb Honey Lowers Market 432
Grass, Long, Near Entrances. Coverdale 90
HONEY
  Brokers, Getting Busy ... 669
  Container Situation 428, 510, 592
  Dark, Selling 90
  National Advertising ..10, 169
  (see Comb)
HONEY MARKET
  Depends on Producer.... 589
  Discussion Invited....... 509
  Gov't Reports Free 432
  Lowered by Granulation.. 432
  Present and Future...... ..... 10, 249, 427, 749, 750
  Starting 669
HONEY PLANTS
  Alfalfa and Sweet Clover as Feeds 671
  Alfalfa, Grimm, Gov't Advises Trial of 511
  Alfalfa Honey in the East. 171
  Alfalfa Requires Bees for Pollination 170
  Alfalfa Winter-killed in Middle West 551
  Buckwheat Discussed 591
  Clover Prospects for Coming Year 751
  Dandelion as Yielder..... 431
  its Future in Middle West. 511
  Put on Map by Coverdale 12
  Taken from List of Weeds. 752
  to Replace Winter-killed Alfalfa 511
HONEY PROSPECTS
  Bright 9, 249, 251
  Determined by Producer.. 589
  Discussion Invited 509
Indiana Appropriation Bill. 171
Isle of Wight (see disease)
LAW
  Foul Brood, Canadian.... 752
  Net Weight 12
  Relating to Bees Given in A B C 752
Literature Bee (see Bee Lit.)
Marketing Roadside, Profitable for All........... 9
Market Honey (see Honey Market)
Nosema Apis (see disease)
Net-Weight Law Not so Bad. 12
Ontario, Co-operation in Prices 89
Outlook for Beekeeping.... .... 9. 249, 251
Pollen for Spring Breeding.. 829
Pollination of Alfalfa Requires Bees 170
Pound Packages, Brood in.. 672
PRICES
  Comb Honey 432
  Co-operation in Ontario... 89
  Discussion Invited...... 509
  for 1917 249
  Here and in Europe..... 670
  High, Reasons for....... 10
  How Lowered 589
  Reported in January issue 10
  Reported in June number. 427
QUEEN
  Breeder, Hard Season for. 592
  Caged for Swarm Control. 591
  Excluder, Brood Above 590, 591
  Mortality in Shipping..... 830

Sac Brood (see Disease)
SELLING
  Dark Honey 90
  Recommendation by Beekeepers' Conference.... 330
  Roadside, Pays 9
  that Lowers the Market.. 589
Shipments Delayed, Complaints 909
SHIPPING
  Comb Honey by Mail.... 830
  Combless Packages, Best Way for 430
  Combless Packages Delayed in 592
  Queens, Mortality in..... 830
SPRING
  Equalization of Brood.... 590
  Need of Pollen for Breeding 829
Starving and Swarming.... 511
SUGAR
Sugar for Feeding......... 911
  Shortage and Comb-honey Production 331
  Shortage for Feeding..... 829
  Shortage in Europe...... 427
  Under Gov't Control..... 749
SWARM CONTROL
  Brood Above Excluder... 591
  Queen Caged 591
SWARMING
  and Starving........... 511
Sweet Clover (see Honey-plants)
Transferring, Two Kinks... 249
Uniting, Newspaper Method. 829
WAR
  Duties of Beekeepers..330, 431
  Effect on Honey Market.. .... 249, 427, 749
  Honey Used in Great Quantities 669
  Problems, Beekeepers' Conference on 329
  Soldiers Need Honey..... 10
WAX
  Caution in Cleansing..... 509
  Saving Imperative 509
Windbreaks vs. Packing.... 750
WINTER
  Cluster Space Above..... 831
  Examination of Bees..... 171
  Losses in West Severe.... 430
  Nests for Outdoor Colonies 831
WINTER-CASES
  Demuth's 830, 831
  Quadruple ....'... 911
  Quadruple 90
WINTERING
  Cellar vs. Outdoor....... 750
Contracted Brood-chamber for 910
  Demuth's Method 830, 831
  in Barrels 91
  in Different Localities.... 750
  in Two Stories.......... 89
  Prospects 170
  Stores and Packing...... 831
  Two Cheap Methods...... 909
  Windbreaks vs. Packing.. 750
WINTER-PACKING
  Demuth Plan 831
  or Windbreaks 750
  Two Cheap Methods of... 909
WINTER STORES
Winter Stores Conservation of 910
  Glucose for 911
  Sugar for 911

A. I. ROOT'S DEPARTMENT

A B C of Potato Culture.... 487
Airline Buzzer, Introduction to 959
Alcohol and Pneumonia.... 397
Alfalfa and Sweet Clover to "Reduce High Price of Living" 561
Alfalfa for Greens 889
Anti-tipping Law of Tennessee 727
Automobile, Electric, Run by Wind Power 882
Barker, Dr. C. E. 798
Batteries, Storage 883
Batteries, Storage, High Cost of 885
Batteries, Storage, Charged by Wind Power 882
Beekeeper at 80, and Why.. 398
Beekeeping in Southwest Florida 727
Blindness, Kinds of 389
Bradentown, Florida, Bee Convention 147
Bread, Casting it on the Waters 66
Breakfast Food, Short Cut on 807
Booze and Prostitutes...... 482
Booze and Cigarettes too.... 562
"Booze" or "Fuel"...... 805
Bread or Booze 563
Brooder, Fireless 219
Bugs, Squash and Melon, Picking by Hand........ 724
Butter, High Cost of....... 301
Cantaloupes 973
Carp, German, for Food... 556
Carloads of Beer or Carloads of Coal 887
Cassava for Chickens 394
"Catching Cold," and what to Do 397
Chayote in Louisiana 886
Chayote in Mexico........ 803
Chayote, the New Vegetable.. 641
Chickens in Arizona....... 801
Christian Witness in War, by Dean Bosworth 720
Cigarettes and American Tobacco Co. 397
Cigarettes and Efficiency... 888
Cigarettes in China 885
Clothing, Use of Unnecessary 881
Clover, Sweet 886
Corn Meal and High Cost of Living 302, 642
Corn, Sweet 899
Crime, Carnival of in Cities.. 720
Crops of Irish Potatoes, Two in a Season 480
Crumbs, Saving, while Brewers get Grain 888
Cultivator, Light 957
Damages, Making out a Bill for 216
Dasheen—more about it.... 146
Dasheens coming into Use.. 642
Dasheens in Place of Potatoes 392
Deafness, Help for by Globe Audiphone 218
Deaf Mutes 415
Demand and Supply—Buying Honey 722
Dope Cures, Legislation Against 218
Early Ohio Potato......... 802
Eggs only 15 cts. a Dozen... 66
Eggs, Duck, for War Times.. 557
Eggs, Fertile, for Hatching.. 643
Eglantine Chicks and Chickens 219
Electrical Experiments ..954, 959
Electricity from Niagara Falls 881
Enserol and Boric Acid for Eye and Ear 302
Everitt, James A., Indianapolis 146
Farm, $25 a Day on 803
Feed for Chickens, High Cost of 393
Feet, Trouble with the 889
Fragments, Gathering them Up 819
Flying-machines for War... 301
Flying-machine, the Wright . 309
Food and Fuel, Conserving.. 563
Ford Factory, Detroit..... 390
Forrest's Electric Power ... 882
"For whom are You Working?" 638
Freezone, etc 889
Friends Mistaken for Enemies 723
Garbage and Slop-pan...... 557
Garden, My Ohio 957
Garden, Our Florida....... 145
Gardenette and Sandwich System 819
Give us this Day our Daily Bread 568
Gleanings and Windmill Power 956
Goats and Goats' Milk.... ....147, 394, 726
Grain for Chickens, instead of for Brewers.......... 562
Grain, Shiploads of, Sunk in Sea 727
Grain, 60 Million Bushels for Brewers 644
Greenhouses and their Construction 889
Green, Mrs. Hettie, and her Treasures 66
Gyroscope, Present Use of.. 144
Happiness, Shortest Cut to.. 800
Happy, How to be when Abused 143
High Cost of Living......65, 802
Highway, the Dixie........ 393
Honey from Alfalfa a Cure for the Blues........... 148
Honey in Place of Sugar.... 302
Idiots and Imbeciles....... 221
"In all thy Ways acknowledge him" 880
Incubator, Buckeye 219
Incubator, Natural Hen.... 725
Insanity, Cause of 220
Ivy, Poison, Worse than Stings 218
Kentucky and Temperance Legislation 731
Kentucky, Defense of 887
"Kentucky Whisky" and Illiteracy 806
Lewis Pub. Co., "University City, Mo." 642
Life, The Victorious 215
Lighting, Electric, by Wind Power 882
Lord will Provide 68
Marriage and Divorce 297
Mill, Family, for Grinding Grain 803
Mott, John R., Secretary of Y. M. C. A. 476
Mothers and Brewers 804
Mothers of our Land, Price above Rubies 725
Nitrogen from the Air...... 567
Old, Growing Gracefully.... 298
Oleomargarine 301
Oleomargarine and Butter.. .... 478, 488, 643
Patriotism, True and False.. 216
Pledge, Tobacco 68
Plums, Wild, of Wisconsin.. 883
Potato as well as Cabbage Plants 391
Porto Rico Votes Dry 731
Potato Eyes by Mail........ 802
Potato-pen 559
Potato-pens 958
Potato-pens a Failure 731
Potato, the Rural New-Yorker 628
Potato-growing in Florida... 568
Potato, Maule's Early Thorobred 146
Potatoes for Chickens....... 482
Potatoes in 60 days 642
Potatoes, Irish, Transplanting 391
Potatoes $1.00 a Peck...... 481
Potatoes Started in a Hotbed 145, 217
Power, Windmill 883
Prohibition in Florida...... 888
Prohibition in Vancouver... 888

Prohibition, "sad" Results of 888
Prayer, Public and Private. 299
Pumpkins, Feeding them on Sugar and Milk 392
Queens Shipped by Express from Ohio 215
Railways, Deaths from 889
Rat Story, the Farmer's.... 811
Rejoice and be Glad........ 143
Righteousness, Hungering and Thirsting for........ 390
Sawdust, Starting with, and Ending with Gold........ 801
Self and Selfishness 65
Shannon's Good Books..... 648
"Shoes" in Place of "Booze". 220
Sick People, Robbing 724
Stories, Fake, about Agriculture 392
Streeter, Execution of 722
Sunday, Selling Honey on... 801
Sugar for Brewers Only.... 805
Super Thief, the 396
Supper, Fruit 66
Temperance all over the World 888
Terry, T. B., Death of...... 69
Tobacco-users — some of the Things they Lose........ 220
Treasures on Earth and in Heaven 66, 217
Victuals and Drink — Especially Drink 806
War and the Liquor Business 475
War, Can a Christian Go to? 477
War Gardens and Gymnastics 880
Watermelon, Baby's Delight. 958
Water we Drink 807
"What to Do," etc......... 487
Wind, the Tempered 884
Wind, Harnessing the 811
Windmill as a Motor....... 955
Women, did God Make them Better than Men? 299
Worry and Borrowing Trouble 879

ILLUSTRATIONS

Advertising Signs..13, 14, 15, 690
Algaroba (see Honey-plant)
APIARY
  Abbott's, Michigan 713
  Adam's, Florida......... 768
  and Honey House, Klabuhn's 866
  Baldridge's, New York.... 334
  Blocher's, Illinois 446
  Bobea's La Vega 683
  Buchanan's, Tennessee... 769
  Byer's, Ontario 108, 677
  Cellar and Extracting-house 513, 514
  Covered with Snow...... 141
  Dodd's, New York 266
  Eckbaring, Iowa........ 349
  Gilbert's, H. I. 840
  Granger's, Toronto 38
  Greenhouse 40
  Horner's, N. J. 517
  Hunderwadel's, Tennessee. 785
  in Winter (January Cover)
  James', Maryland 101, 103
  Jones' Ky. 776
  Lewis', Massachusetts.... 762
  Massachusetts Agricultural College 609
  May's, Illinois 43, 852
  Minnesota University..... 338
  New Jersey Experiment Station 182
  on Mexican Border 848
  Penn Co.'s, Mississippi . 916
  Repp's, New Jersey 434
  Root's, Before and After Moving 793
  Shed, in West . . 348
  Sieja's, San Domingo. ... 683
  Skougard's Utah .. 688
  Track in 840, 841
  Trostle's, Iowa 44
  University Wisconsin (February Cover)
  Well Kept and Neglested.. 931
  Wright's New York...912, 913
  Yoder's, Idaho 611
Apple Tree (see Honey plant)
Aster (see Honey-plant)
AUTO TRUCK
  Extracting House 598, 599
  for Queen-breeder 925
  Ford 348, 596
  Reo Loaded 792
Bags to Prevent Robbing. . 675
Baldridge, C. J. 332
Bales, P. H., and Family.... 264
Bartlett, Ira D. 178
BEE
  Cages (see Cage)
  Escape, Inserting........ 540
  Suit, White 139
  Tree in Australia 686
  Worker (March Cover)... 252
Beekeepers' Parade 268
BEEKEEPING
  at Massachusetts Agricultural College 608, 609
  Outfit for Beginner 285
BEES
  Brushing from Combs.541, 542
  Nucleus (see Nucleus)
  on Artificial Pollen ...188, 271
  Pound Packages of (see Pound Packages)
  Shaking from Combs..... 541
  Stages in Development... 208
  Watering 848
  Watering-Device for 294
  (see Swarm)
Bottom Boards. Painting 346, 348
Box Hive (see Hive)
BROOD
  and Pollen in Comb...... 207
  Too Much Drone........ 539
Brown, E. G. 514
Burr, Leslie 840
Buckwheat in Bloom (see Honey-plant)
Business Card for Beekeepers 14
Cage, Achord's Bee 175
Calendar for Advertising.... 949
Cameron, Louis A.......... 534
CAPPINGS
  Receptacle for 620
  Removed 286
  Melter for, Bartlett's..... 269
  Armstrong 936
Card (see Business Card)
Cellar, Extracting House, and Apiary 513, 514, 760
Cells (see Queen Cells)
Chayote Fruit 641
Clover Field (see Honey Plant)
Cluster (see Swarm)
Clustering Space, Hill Device for 832
Collins, J. H. 837
COMB
  Building on Fdn......... 206
  Built under Hive........ 356
  Melter and Wax Press.... 862
  with Too Much Drone Brood 539
COMB HONEY
  and Eggs, Crated Together 267
  from Colony in City Block. 865
  Method of Swarm Prevention 353
  Holey 140
Combless Packages (see Pound Packages)
COMBS
  Brood and Pollen in. ... 207
  Bulged 539
  New and Old 207
  Show Stages of Bee Development 208
CONVENTION GROUP
  Iowa 106
  Group (see Field Meet Group)
Cucumber Plants 201, 281, 369, 439
Dandelion (see Honey-plant)
Davis, John M. and Ben J. 785
Demonstration Train, Tennessee 461
Demuth's Winter-case...... ....842, 843, 921, 922, 923
Dodds, Geo. 266
Donahey, J. H. and Root, A. I. 342
DRONE
  Brood, Too Much 539
  Cells One Side, Worker Other 438
Eckbaring, V. H., Iowa.... 350
ENTRANCE
  Protection for Winter Case 763
  Screen to Keep Out Mice. 770
Escape (see Bee-escape)
Excluder (see Queen Excluder)
Exhibit at Fair............ 595
EXTRACTING
  Capping Receptacle for... 620
  House, Cellar and Apiary. 513, 514, 760
  House on Trailer.....598, 599
  Outfit 285, 542
  Wagon, Rigg's 442
Extractor 286
FEEDER
  in Greenhouse Experiment 200
  Pails, Friction-top....... 779
  Powell's Floor Tin-tray... 793
Feeding Outdoor 179
FIELD MEET GROUP
  Iowa 515
  New Jersey 182
  Tennessee 784
  West Virginia 863
  (see Convention Group)
Field Meet of Grocers at Medina 640
Folder and Fdn. Fastener, Markham's 351
Food from Honey Recipes... 202
Fooshe, J. D. and Wife 607
FOUNDATION
  Fastener, Markham's 351
  Imbedding by Electricity.. 260
FRAMES
  Construction of 258, 259
  Wiring 62
Frey, Mrs. F. 253
Garden, Hellwig's, Ohio.... 479
Goldenrod (see Honey-plant)
Gravity Strainer 600
Greenhouse of Queen-rearing Experiment .41, 42, 120, 121 122, 200, 201, 280, 368, 369
Hill Device for Clustering Space 832
Hill's Sweet Clover in Iowa.. ....512, 513
HIVE
  at End of Season.....448, 518
  Bottoms Dipping in Paint. 346
  Box 364
  Byer's Double-walled 108
  Charred, Bees Keep Inside Cool 29
  Divisible Brood-chamber.. ....689, 690
  in Greenhouse Experiment 41
  in Tree 633
  Jumbo 677, 689
  Mrs. Frey's 254
  on Scales 447
  Parts of 132
Hiving Board, Hamelberg's.. 444
Hive, Blocher's, at End of Season 448
HOME
  Alpaugh's Florida 838
  Byer's 677
  Miss M'Isaac's 865
HONEY
  for Sale Sign 13, 15, 690

  House and Apiary, Homemade ... 866
  House, Concrete, Rigg's... 442
  Made Food ... 202
  Sellers, Girls for.....113, 597
  (see Comb Honey)
HONEY-PLANT
  Algaroba (November Cover)
  Apple Branch ... 333
  Apple Orchard (see Orchard)
  Apple Tree (May Cover).. 334
  Aster (October Cover)
  Buckwheat (August Cover)
  Clover Field (July Cover) ...520, 714
  Dandelion (April Cover)
  Goldenrod (September Cover)
  Papaya Tree ... 863
  Royal Palm and Algaroba (November Cover)
  Sweet Clover Field....... 714
  (see Orchards)
IMBEDDING WIRES
  Ford for ... 937
  Mason Jar for... 938
James, N. W., and Family... 102
Jumbo Hive (see Hive)
Nucleus, Starting with..... 365
Orchard 333, 433, 434 435
Painting Outdoors......346, 348
Papaya Tree (see Honey-plant)
Pear Orchard ... 434
Pollen and Brood in Comb.. 207
Pollen Substitute ... 188, 271, 280, 281
Potatoes, Plate of ... 481
POUND PACKAGES
  Bees in ...172, 173
  Putting in Hive... 365
  Ready for Shipment...915, 917
Pumping Plant, Gilbert's... 840
QUEEN
  Cage, Top-bar... 715
  Cells (see Queen-rearing)
  Clipping of ... 458
  Excluder ... 286
  Laying ... 458
  Poking Head in Cell.... 458
QUEEN-REARING ... 95, 97
  (see Greenhouse)
Road Macadamized thru Orchard ... 433
Root, A. I., and Donahey, J. H. ... 342
Root, C. H. ... 181
Royal Palm (see Honey-plant)
Scale Hive ... 447
SCHOOL, BEEKEEPING TAUGHT IN
  Massachusetts Agricultural College ...608, 609
  Wisconsin University Apiary (February Cover)
Screen on Entrance... 770
SECTIONS
  Dampening Machine for.. 270
  Holey ... 140
Selling Honey, Girls for (see Honey)
Shed Apiary, Hives Paper Wrapped for Winter... 762
SIGN
  for Selling Honey ..13, 15, 690
  War Garden ... 694
Snow Covered Apiary...... 141
Spraying, Mixing Tanks for Liquid ... 434
Stowell, P. W. ... 119
Suit, Bee (see Bee)
SUPERS
  Bumping Bees Out ... 611
  Removing ... 443
  Removal of, Bags for.... 675
  Stacked High ... 518
SWARM
  Board, Hamelberg's...... 444
  Catcher, Hamelberg's..... 444
  Clusters Large and Small. 365
  Control Ventilator ... 445
  for Picture Frame ... 119
  Held by Trostle... 535
  Hiving of ... 459
  Long Cluster ... 777
  on Small Tree......447, 451
Sweet Clover (see Honey-plant)
Tanks, Mixing, for Spraying Liquid ... 434
Terry, T. B... 70
Transferring ... 364
Tree (see Apple, Pear, etc.)
Trostle, Geo. J. ... 535
Vegetable, Chayote ... 641
Ventilator, Swarm Control.. 445
View Hilly Country in British Columbia
Vineyard, Kepp's N. J. ... 435
Volunteers, Three from Medina ... 536
WAX
  Large Pile of... 260
  Press and Comb Melter... 862
WINTER-CASE
  Berrian's ... 794
  Demuth's 842, 843, 921, 922, 923
  Entrance Protection ... 763
  Packing ...858, 859
  Root's, C. H. ... 181
Winter Cluster, Hill's Device for ... 832
Winter Repository, Dugout ... 759, 760
Wintering, Deep in Snow... 141
Wintering, Wrapped in Paper ... 762, 785
Worker Bee (see Bee)

CONTRIBUTORS

Achord, W. D. ...174, 834
Adams, G. W. ... 605
Adkisson, E. A. ... 950
Aeppler, C. W. ... 93
Alexander, C. F... 949
Alley, F. M. ... 186
Alpaugh, J. ... 838
Ames, A. C. ... 270
Anderson, F. ... 949
Anderson, H. ... 867
Anderson, J. J. ... 295
Atwater, E. F. ... 352
Ault, A. E. ... 727
Averill, B. F. ... 392
Babcock, F. M. ... 791
Baldwin, E. G. ... 529
Bales, P. H. ... 263
Banks, J. I. ... 836
Barber, F. L. ... 177
Barker, C. ... 597
Barnett, Wm. S. ... 836
Bartlett, Ira D. ... 178
Bartlett Miller, H. ... 37
Basim, W. S. ... 473
Baumbach, C. H. J. ... 792
Bender, C. F. ...186, 473
Bercaw, G. W. ... 396
Berrian, V. C. ... 794
Betts, A. P. ... 267
Biediger, Louis ... 685
Bird, E. C. ... 867
Blackbourn, B. ... 686
Blanchard, C. E. ... 763
Blocher, D. J. ... 449
Bodenhafer, J. G... 63
Bohn, H. S. ...919, 939
Bonney, A. F. ... 188
Boughen, W. J. ... 865
Bowden, Chas. ... 474
Bowen, A. H. ... 36
Brant, H. G. ... 415
Brewer, M. L. ... 633
Brockwell, J. B. ... 836
Brown, J. A. ... 688
Bryant, J. A. ... 602
Buchanan, J. M. ...520, 770, 847
Burr, Leslie ...23, 839
Burton, S. H. ... 138
Butler, Flora L. ... 416
Byer, J. L. ...676, 755, 935
Byers, Mrs. A. A. ... 222
Byington S. T. ...63, 949
Calderwood, W. G. ... 644
Carmichael, B. E. ... 726
Carter, E. L. ... 117
Carter, W. D. ... 865
Chamberlain, C. C. ... 213
Cheney, C. D. ... 293
Chadwick, P. C. 351, 530, 606, 682
Christenson, M. ... 387
Clare, F. P. ... 595
Clare, W. P. ... 38
Clausen, J. ... 867
Cleaver, E. A. ... 63
Clement, R. A. ... 294
Clute, C. L. ... 140
Colell, C. A. ... 864
Collingwood, H. W....393, 725
Collins, J. H. ... 836
Cook, A. T. ...147, 300
Copeland, A. T. ... 416
Cotell, C. A. ... 632
Coverdale, F. ... 846
Craig, Wm. ... 176
Crowfoot, C. E. ...38, 634
Crowston, C. C. ... 217
Crysler, W. A. ... 850
Cushman, Samuel ...109, 174
Cutts, J. M. ... 295
Cyrenius, F. H. ... 64
Danielson, D. ...294, 862
Davis, N. E. ... 862
DeGraff, F. H. ... 793
Derbyshire, Rhoda W. ... 145
Diebel, J. H. ... 866
Dodson, M. L. ... 950
Dobbs, G. ... 265
Donaldson, J. M. ... 450
Dwyer, E. F. ... 148
Elwell, Robt. ... 139
Felt, E. P. ... 471
Finley, A. W. ... 850
Fisbeck, J. H. ...295, 353, 715
Flanagan, E. T. ...398, 899
Fleming, E. ... 767
Fooshe, F. ... 607
Forehand, L. L. ... 835
Fowler, C. E. ...609, 643
Fowls, C. ... 596
Fowls, I. ... 680
Frazier, E. C. ... 141
Freeman, E. M. ... 396
French, J. G. ... 295
Frey, Mrs. S. W. ...253, 336
Gaines, H. B. ... 212
Gaster, R. T. ... 918
Gathright, Wm. C... 886
Gifford, Ruth C. ... 770
Gilbert, A. C. ... 347
Graeber, W. O. ... 386
Graff, J. L. ... 864
Gravely, F. W. ... 185, 473
Green, S. N. ... 391
Greiner, F. ...114, 387, 862
Griffith, W. C. ... 863
Guthrie, G. W. ... 385
Hamelberg, J. H. ...294, 445
Harris, E. A... 914
Harris, Mary B. ... 727
Harter, F. S. ... 63
Harvey, M. W. ... 525
Hawkins, Kenneth ...61, 176
Hendricks, E. ... 559
Hickey, W. J. ... 385
Hill, C. L. ... 594
Hill, F. ...389, 394
Hollopeter, J. B... 918
Holterman, R. F. ..105, 268, 526, 591, 673, 678, 766, 912, 938
Horner, H. ... 516
Howard, J. L. ... 396
Huber, D. ... 387
Huff, H. A. ... 846
Hunter, R. B. ... 644
Isaac, C. B. ... 349
Jager, Francis ... 35
Johnson, J. E. ... 761
Jones, O. J. ...141, 610

Keck, I. 398
Keep, B. 140
Kelly, H. L. 471
Kerley, A. C. 714
Kimball, Sherman 148
Klaburn, C. 866
Krause, W. E. 119
Lacy, Mrs. L. 216
Ladd, E. J. 387, 471
LeStourgeon, E. G. 933
Lewis, J. M. 762
Leininger, Fred 836
Lighty, L. W. 488
Likens, W. W. 471
Lishman, W. A. 185
Littleton, L. R. 218
Little, Elizabeth 443
Lockard, J. R. 416
Long, I. E. 791
Lotz, Myrtle 416
Love, J. W. 480
Mackay, C. B. 948
Markham, F. 351
Marsh, E. H. 142
Marshall, C. W. 794
Martin, T. 792
McCormick, Chas. 223
McMillan, A. A. 416
McMillan, M. C. 187
Miller, A. C. 600
Miller, C. C. ..255, 385, 436, 470,
471, 472, 473, 791, 863, 866
Miller, E. C. 595
Miller, E. S. 339
Miller, S. E. 715
Moore, J. P. 833
Moore, W. M. 218
Morgan, E. A. 516
Morse, Josephine 608
Mott, E. E. 835
Munroe, J. M. 803
Murray, H. B. 836
Murray, H. D. 943
Nance, G. W. 596
Neal, C. A. 148
Newcomb, Susan R. 605
Newell, W. 382
Nichols, J. W. 355
Omerod, G. A. 633
Onstott, R. C. 416
Paddock, F. B. 757
Parker, G. H. 634
Parker, L. 226
Pfaltzgraff, H. C. 34
Phelps, C. W. 920
Phillips, E. F. 111
Phillips, Geo. W. 27
Porter, W. L. 212
Pou, Geo. 682
Powell, C. W. 793
Powers, S. 593
Pride, D. 451
Pryal, W. A. 848
Purvis, W. J. 345
Quirin, H. G. 835
Rankin, D. F. 388
Rattray, A. 270
Ray, S. A. 214
Reddout, W. N. 147
Reed. W. H. 887
Reimer, O. 387
Reynders, C. 472
R. F. D. 449
Rich, Hen E. 119
Richardson, Florence B. 109
Riggs, T. J. 441
Root, E. R. 29. 30, 107, 172,
181, 252, 332, 433, 512, 759,
842,
Root, H. H. 257, 599
Root, J. H. 801
Roth, S. E. 801
Scofield, J. S. 716
Scott, H. 213, 415
Seamans, E. 610
Sempers, J. F. 528
Severin, F. J. 347
Shallard, Major 61
Shaw, F. E. 917
Sheldon, C. 269
Sheppard, W. J. 64
Shranger, L. H. 148
Shuey, S. M. 795
Simmons, J. A. 347
Skougard, M. L. ...597, 688, 865
Sladen, F. W. 386
Smith, A. W. 265
Smith, E. S. 214
Smith, J. 937
Smith, W. 888
Sorge, Mrs. N. H. 216
Stapleton, N. L. 214
Stark, G. P. 561, 594, 959
Steers, Rev. A. W. 147
Stimson, C. 62
Stover, D. D. 834
Strangways, G. W. 449, 595
Tait, R. D. 354
Tanton, L. P. 335
Thomas, E. 948
Thompson, J. E. 715
Thorne, C. E. 560
True, J. P. 355, 597, 684
Tschudin, Ernest 887
Turner, C. L. 597
Van Galder, A. C. 472
Van Pettin, J. F. 801
Vollmer, W. F. 935
Walker, Curd 920
Walker, E. C. 112
Warren, E. E. 726
Weaver, V. 296
Webb, L. E. 187, 690
Wheeler, Mrs. A. A. 886
White, Jean 139
Whitten, G. T. 446
Wilder, J. J. 768
Williams, Edgar 20
Williams, T. A. 959
Wing, J. E. 39
Winkler, E. A. 936
Worden, W. H. 795
Wright, F. J. 958
Yoder, G. J. 610

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Notices will be inserted in these classified columns for 25 cts. per line. Advertisements intended for the department cannot be less than two lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

Small lots off-grade honey for baking purposes. C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

Extra quality light-amber extracted honey in 60-lb. cans. It's fine; 12 cts.
Joe C. Weaver, Cochrane, Ala.

FOR SALE.—Michigan's best white extracted honey in packages as desired. Also comb honey.
A. G. Woodman, Grand Rapids, Mich.

FOR SALE.—Old Kentucky clover extracted, thick and ripe. Packed in bright 60-lb. tins.
H. C. Lee, Brooksville, Ky.

FOR SALE.—11,000 lbs. clover and basswood extracted honey put up in 60-lb. cans. Who wants it, and at what price? Sample, 10 cts.
W. M. Peacock, Mapleton, Ia.

FOR SALE.—Clover, heartease. No. 1 white comb, $4.25 per case; fancy, $4.50; extra fancy, $4.80; 24 Danz. sections to case, extracted, 120-lb. cases, 15 cts. per lb. W. A. Latshaw Co., Carlisle, Ind.

FOR SALE.—12,000 lbs. of white extracted alfalfa-clover honey in new 60-lb. cans, 15c per lb., F. O. B. Hardin. Cash with order. Sample 10c.
Custer Battlefield Apiaries, Hardin, Mont.

$1.50 pays for a year's subscription each to the Domestic Beekeeper and Gleanings in Bee Culture. You can order them from either office as you prefer.

HONEY AND WAX WANTED

WANTED.—Comb and extracted honey.
J. E. Harris, Morristown, Tenn.

WANTED TO BUY beeswax. Highest prices paid. W. A. Latshaw Co., Clarion, Mich.

WANTED TO BUY a quantity of dark and amber honey for baking purposes.
A. G. Woodman Co., Grand Rapids, Mich.

WANTED.—Comb and extracted honey at jobbing prices. National Honey Producers' Association, Kansas City, Mo.

WANTED.—Extracted honey in both light and amber grades. Kindly send sample, tell how honey is put up and quote lowest cash price delivered in Preston. M. V. Facey, Preston, Minn.

WANTED.—WHITE OR LIGHT-AMBER extracted honey in any quantity. Kindly send sample; state how it is packed, and your lowest cash price. Can also use beeswax. E. B. Rosa, Monroe, Wis.

Chas. Israel Bros. Co., 486 Canal St., New York. Established 1878. Wholesale dealer in Honey and Beeswax. We buy Honey. Send us samples and the quantities you have, also your best price delivered New York. We pay the highest market price for clean, bright yellow beeswax.

BEESWAX WANTED—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

WANTED.—To buy light extracted and No. 1 comb honey; also a few cases of buckwheat comb.
Wm. G. Blake, Port Huron, Mich.

WANTED.—Beeswax. We pay higher than market price; let us know how much you have and if possible send sample; get our quotation before selling your wax. Queen Mfg. Co., Falconer, N. Y.

Be sure to include the Domestic Beekeeper with your list of bee-journals for 1918.

The Domestic Beekeeper will help you to dispose of your crop of honey without expense to you; also buy your beekeeping supplies for you at cost. If you knew all we are doing for our subscribers you would certainly be with us during 1918 as a subscriber. Can we have the pleasure of entering your name on our subscription list? Address The Domestic Beekeeper, Northstar, Michigan.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—Some fine 10-frame hives. Write
James McKee, Riverside, Cal.

FOR SALE.—Honey-jars, both small and large sizes. Write for prices. D. H. Welch, Racine, Wis.

SEND TODAY for samples of latest Honey Labels. Liberty Pub. Co., Sta. D, Box 4-E, Cleveland, Ohio.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Paris, Tex.

FOR SALE.—500 extracting-supers, nailed and painted, with frames. Will sell cheap.
A. F. Stauffer, Delta, Colorado.

SHELLED PEANUTS.—5, 10, and 25 pound packages, 15c pound, add postage.
D. W. Howell, Shellman, Ga.

THE ROOT CANADIAN HOUSE.—73 Jarvis St., Toronto, Ont. (note new address). Full line of Root's famous goods; also made-in-Canada goods. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

Going out of business. Will sell at bargain entire outfit consisting of 50 colonies first-class 3-banded Italian bees, 250 supers, extractor, and all necessary supplies. Everything in good condition. Address Lorne Becksted, Rt. 4, Box 18, Watertown, N. Y.

Hive-outfit bargain, quick! Iron-frame hive-saw, 12-inch saw, and dado heads, Huther Bro's, complete for hive-making, 12 ft. belting; three-horse-power motor, electric; 1 three-ft. driving-shaft; fast and loose pulleys; 18-inch driving-wheel, all good as new. Cost $250.00 Will sell for half, if sold at once. Address Beekeeper, Medina, Ohio, care A. I. Root Co. 38392

You have likely been thinking for some time that you would like to have the Domestic Beekeeper come to you regularly each month, but have been putting it off for some reason or other. We should like very much to have you all start in with us this next year. We are very sure you will not regret it if you make this start. To some of the early December subscribers for 1918 we will send free the last three numbers of 1917. If you expect to get in on this back-number proposition you will need to be prompt in ordering, as those back numbers are going fast and there will be none when the present supply is exhausted. Address with remittance The Domestic Beekeeper, Northstar, Michigan.

WANTS AND EXCHANGES

WANTED.—Foot-power saw.
Raleigh Hamond, Rt. 2, Bethune, S. C.

WANTED.—Second-hand 2-frame extractor with large-size pockets. Box 43, Fleming, O. 61907

WANTED.—One four-frame honey-extractor with 12-inch baskets. Fred Alger, Omro, Wis.

WANTED.—Airsdale or Irish Setter female puppy. E. H. House, Saugatuck, Mich.

WANTED.—Old-style extractor and foundation mill. Jesse Chapin, New Berlin, N. Y.

WANTED.—A comb foundation press, second-hand, but in good condition, for full-size combs.
W. D. Achord, Fitzpatrick, Ala.

BEESWAX WANTED.—For manufacture into Weed Process Foundation on shares.
Superior Honey Co., Ogden, Utah.

WANTED.—50 to 100 colonies bees in eastern North or South Carolina or Georgia.
I. J. Stringham, 105 Park Place, New York.

WANTED.—An extractor, two or four frame; must be in good condition, and a bargain.
J. O. Stewart, 742 Elmore Pl., Brooklyn, N. Y.

WANTED.—Foundation machine, brood foundation. Give full description and price. Machine must be in good condition.
W. J. Stahmann, Clint, ElPaso Co., Texas.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., 204 Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings, or slumgum. Send for our terms and our new 1917 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

It will be the same to us whether you remit for the Domestic Beekeeper direct to Northstar, Michigan, or whether you send it in with your subscription to Gleanings in Bee Culture; but be sure to include it as we want every Gleanings in Bee Culture subscriber to become a Domestic Beekeeper subscriber.

BEES.—Experienced bee man would work few hundred colonies of bees on shares in irrigated district. Good references.
Geo. Bancroft, Carrolls, Washington.

AUTOMOBILE REPAIRS

AUTOMOBILE owners should subscribe for the Automobile Dealer and Repairer; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline-engine repairs. $1 per year. 15 cents per copy. Canadian subscriptions $1.50. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

REAL ESTATE

YOU CAN DO BETTER ON A SOUTHERN FARM. Send for a year's subscription Free to our beautifully illustrated magazine, The Southern Homeseeker, which tells all about good, low-priced land and southern opportunities. Write F. H. LaBaume, Agr. Agt. N. & W. Ry., 246 Arcade Bldg., Roanoke, Va.

A small California farm earns more money with less work. Raise the crops you know about—alfalfa, wheat, barley, etc.—also oranges, grapes, olives, and figs. Ideal for dairying, pigs, and chickens. No cold weather; rich soil; low prices; easy terms; good roads; schools and churches. Enjoy life here. New comers welcome. Write for our San Joaquin Valley, also Dairying and Poultry Raising illustrated folders free. C. L. Seagraves, Ind. Com. A. T. & S. F. Ry., 1927 Railway Exchange, Chicago.

Do you want a farm where largest profits are made? The South's great variety of crops and wonderfully productive climate make it the most profitable farm section of America. It is the place for the lowest-cost meat production and dairy farming. It grows the largest variety of forage crops. Good lands, in good localities, as low as $15 to $25 an acre. Let us show you locations that will give the highest profits. M. V. Richards, Commissioner, Room 27, Southern Railway System, Washington, D. C.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, 1159 DeWolf St., Vincennes, Ind.

PHELPS queens will please you. Try them and you will be convinced. C. W. Phelps & Son.

Well-bred bees and queens. Hives and supplies.
J. H. M. Cook, 84 Cortlandt St., New York.

FOR SALE.—Bees, queens, and honey in their season. H. G. Quirin, Bellevue, O.

"She-suits-me" bright Italian queens; $1 by return mail till Oct. 1.
Allen Latham, Norwichtown, Ct.

Try ALEXANDER'S Italian queens for results. Untested, each, 75 cts.; 6 for $4.25; $8 per dozen. Bees by the pound. C. F. Alexander, Campbell, Cal.

When it's GOLDENS it's PHELPS. Try one and be convinced.
C. W. Phelps & Son, Binghamton, N. Y.

Tested leather-colored queens, $2.00; after June 1, $1.50; untested, $1.00; $10.00 per dozen, return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

Vigorous prolific Italian queens, $1; 6, $5, June 1. My circular gives best methods of introducing.
A. V. Small, 2302 Agency Road, St. Joseph, Mo.

Italian queens, THE HONEY GATHERERS. Price one dollar each, nine dollars a dozen. Edith M. Phelps, 259 Robinson St., Binghamton, N. Y.

My bright Italian queens will be ready to ship April 1 at 75 cts. each; virgin queens, 35 cts. Send for price list of queens, bees by the pound and nucleus. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

Golden Italian queens from June to November, untested, 75 cts.; 6, $4.25; doz., $8.00; tested, $1.25; 6, $7.00; select tested, $1.50; breeders, $5.00. Bees by pound or nucleus. Pure mating guaranteed. Send for circular. J. I. Danielson, Fairfield, Ia.

TENNESSEE-BRED QUEENS.—My three-band strain that has given such universal satisfaction for over 40 years. Orders filled promptly or money refunded by first mail. 1000 nuclei in use. Tested, in June, $1.75; untested, $1.00; in July, $1.50 and 75 cts. Postal brings circular.
John M. Davis, Spring Hill, Tenn.

ITALIAN QUEENS, northern-bred, three-banded, highest grade; select untested, guaranteed; queen and drone mothers are chosen from colonies noted for honey-production, hardiness, prolificness, gentleness, and perfect markings. Price, one, $1.00; 12, $9.00; 50, $30.00. Send for circular.
J. H. Haughey, Berrien Springs, Michigan.

FOR SALE.—Must sell my bees because I am drafted; will sell cheap; make me an offer on the following: 20 stands strong healthy bees, 2-story 10-frame; some 2 some 3 years in use, one empty hive, 100 extracting-frames, one Cowan reversible extractor, used 1917; 12 doz. 1-lb. jars; 50 3-lb. cans; 1 doz. winter cases; 5 lbs. comb foundation; 300 A1 sections; 10 wood and wire queen-excluders, used 1917, and the dozen and one other appliances necessary to make a complete outfit. These articles are all first-class goods. Make your best offer, you to take bees at yard, to Ed. Gill, Huntington, Ind.

Southwest Virginia five-band Italian queens, the fancy comb-honey strain, gentle to handle. They will please you. Try one. $1.00 each.
Henry S. Bohon, Rt. 3, Box 212, Roanoke, Va.

HELP WANTED

EXPERIENCED BEEMAN wanted to work mountain apiary on percentage. Fine hunting and climate. References given and required.
C. F. Alexander, Campbell, Cal.

HELP WANTED.—A good reliable man to work on a small farm and help take care of 400 swarms of bees. Would lease the complete outfit to responsible party. Good locations for all the bees. Address S. R. Stewart, Newcastle, Colo.

Special Notices by A. I. Root

WHEN GLEANINGS WAS PRINTED BY WINDMILL POWER.

Since page 956 was in print I have found mention in our back volumes of nearly forty years ago that when the wind-power press ran too fast for my inexperienced hands to feed the sheets, Ernest and Maud (our two oldest children) helped; and when I did not have time to get the sheets straight after being printed, the children pushed them up in a pile; and I now recall that sometimes, when the wind gave a sudden spurt, it was too big a job for the whole of us, and a great lot of sheets were piled up helter-skelter. When the wind slacked up a little we straightened things out.

THAT "ADDRESSED POSTAL CARD," ONCE MORE.

In our issue for November I did not have space to tell you (once *more*) that down in my Florida home I have no stenographer, but that if everybody writing me would inclose an addressed postal card, properly stamped (two cents), I would do my best to give you a prompt answer on said postal. At my age I cannot undertake to write *long* letters to anybody; neither can I undertake to decipher addresses. If you will send an addressed postal card I shall have nothing to do but to write the answer; and if I am in a hurry I do not even need to try to decipher the name of the one who writes. Matters pertaining to business with the A. I. Root Co. should be sent to Medina, Ohio; but questions regarding Florida gardening, "windmill electricity," chickens, etc., can be mailed to A. I. Root, Bradentown, Florida.

VEGETABLE FORCING; OR, GARDENING UNDER GLASS.

The above is the title of another new book by the O. Judd Co., clear up to date. It contains 425 pages and 158 beautiful illustrations. It discusses the whole subject of vegetable forcing from beginning to end. There are 28 pages devoted to lettuce alone, principally the Grand Rapids kind. With the high prices that vegetables grown under glass are now bringing there is a greater incentive than ever before to push this winter industry. The book is written by Ralph L. Watts, Dean and Director, School of Agriculture and Experiment Station, The Pennsylvania State College. One thing that impressed me is the dedication, which reads as follows: "To my mother, my first teacher in vegetable gardening."

The above comes home to me because it was my mother who first taught me how to plant seeds and how to make them do their best. May God bless the mothers! This beautiful book is a gem in the way of print and engraving; and so far as I have reviewed it I should pronounce it, unhesitatingly, the outcome of practical experience in the work. The price, postpaid, is $2.00. It may be ordered of the O. Judd Co., New York, or of us, if you choose, at the price mentioned.

Established 1885

It will pay you to get our 50-page catalog and order early.

Beekeepers' Supplies

The Kind That Bees Need.

The A. I. Root Co.'s brand. A good assortment of supplies for prompt shipment kept in stock. Let us hear from you; full information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

HONEY-JARS

We carry several styles of honey-jars, the most popular being 1-lb. screw-cap at $6.50 per gross. If you need shipping-cases we have them. Catalog of supplies mailed on application. . . . We have a fair stock of light amber and amber honey. . Write for prices. . . . . . .

I. J. Stringham, 105 Park Pl., N. Y.
Apiaries: Glen Cove, L. I.

Brother Beeman!

I am trying io interest all people in the study and love of bees and all nature. It's a big job, especially in these times. I want you to help this cause and yourself. Send 25 cts. for four months' trial subscription

. . to . .

The Guide to Nature
Edward F. Bigelow
ArcAdiA
Sound Beach, Connecticut

Our Food Page.—Continued from page 943.

Nov. 1, was a case of "Hamlet with Hamlet left out;" and it was a nice man among our readers who noticed the omission too. Thank you, Mr. Subscriber, for the very kind words with which you accompanied your criticism. I am beginning to believe beekeepers, at least GLEANINGS readers, are the most appreciative of men.

Please add one cup cooked and sifted pumpkin to that unfortunate recipe, and, on account of the sugar famine, try 2/3 cup honey and no sugar. Mr. Puerden says that makes the best pumpkin pie he ever tasted.

Altho Christmas falls on a meatless day I have taken it for granted that you will substitute another meatless day for that week.

I have tried to plan the simple Christmas dinner so that most of the work can be done the day before. All holidays are apt to be help-less days for us housekeepers.

Notice that the Christmas menu calls for no candies. This will be the first time in many years that I have not made pounds and pounds of candy to give away. I had intended to do the same this year and send it to my soldier friends; but on account of the uncertainty of the sugar supply I intend to send jellies, honey, sweet dried fruits, chocolate, and possibly honey drop cakes. In this vicinity we are cutting out all Christmas giving among grownups, and are using the money to pay for yarn for the Red Cross knitting, and for Christmas gifts to the soldiers.

In the recipes all measurements are level. and the standard set of measuring spoons and the standard half-pint cup are used.

BAKED BEANS

1 qt. navy beans
3 tablespoons honey
2 tablespoons sweet bacon or pork fat
1 tablespoon salt, or more to taste
1 teaspoon soda
½ teaspoon mustard water

Wash and pick over beans and soak several hours or over night. Put on the stove with soda and plenty of water and cook slowly until tender, but not broken. Drain and put in baking-dish with the bacon or pork fat. Measure the honey into a cup; add the mustard and salt and fill the cup with hot water. Pour over the beans and add more hot water until you can just see it. Cover and bake slowly at least two hours, then uncover and bake an hour longer, adding more water if necessary to prevent burning. The beans should be whole, tender, and should have absorbed all the water.

CREAM OF CELERY SOUP

1 cup celery chopped fine
1 cup mashed or riced potato
1 qt. milk
1 teaspoon chopped parsley
2 slices onion
2 tablespoons butter substitute
2 tablespoons flour
2 teaspoons salt
Dash of paprika

Cook the chopped celery and the onion in very little water until tender; add the potato and the milk and bring to boil. Blend the flour, butter, and salt, and thicken the soup with it. Cook gently several minutes; add the chopped parsley and paprika, and serve.

POTATO MUFFINS

1 cup mashed or riced potatoes
1 egg
1 cup skimmed milk
½ teaspoon salt
1½ cups flour
4 teaspoons baking powder
2 tablespoons butter substitute

Beat the egg, add the potatoes, and then the milk. Sift the salt and baking-powder with the flour and sift into the first mixture. Beat well. Add the melted-butter substitute and bake in muffin-pans in a hot oven about twenty-five minutes.

APPLE TAPIOCA PUDDING

1/3 cup granulated tapioca
2/3 cup honey
1 teaspoon cinnamon or nutmeg
¼ teaspoon salt
1 tablespoon butter substitute
6 large tart apples
2 cups water

Pour the water over the tapioca and salt, stirring constantly; bring to a boil and cook in double boiler until clear. While the tapioca is cooking, pare, core, and quarter the apples; arrange them in an oiled baking-dish. Add the butter substitute, the cinnamon. and honey to the tapioca; stir until smooth; pour over the apples and bake until the apples are tender. Cool, and eat with cream or milk.

WELCH-RAREBIT

2 tablespoons butter substitute
2 tablespoons flour
1½ cups milk
½ cup cheese cut fine
dash paprika
½ teaspoon made mustard
½ teaspoon salt
1 egg

Blend the butter substitute and flour in saucepan; add the milk slowly, and, when it thickens, the cheese and seasoning. Stir until the cheese is melted and smooth. Add the egg slightly beaten, and serve with the baked potatoes.

HONEY SUET PUDDING

1 cup suet chopped fine
1 teaspoon salt
¾ cup honey
1 egg
1 cup dates or raisins cut fine
1 cup sour milk
1½ cups whole-wheat flour
1 to 1½ cups white flour
1 teaspoon soda
1 teaspoon baking-powder
1 teaspoon cinnamon
½ teaspoon cloves

Blend the suet with the honey; beat in the egg; add the sour milk and then the flour in which the dry ingredients have been sifted. Flour the fruit lightly and add last. If raisins are used it is well to steam them a few minutes before putting in the pudding. The pudding should be about as stiff as fruit cake. Steam in well-oiled pan for two or three hours. It is quite as good reheated.

CHRISTMAS SAUCE.

1 cup pulverized sugar
1/3 cup butter
Cranberry jelly

Cream the butter and pulverized sugar together until smooth, then beat in the cranberry jelly drop by drop until the desired pink shade is attained. Heap in a pretty glass dish and set in a very cold place until firm. The sweetened juice from cranberry sauce will do just as well as the jelly.

HONEY-SAUCE

1 cup extracted honey
1/3 cup butter

Slightly warm the butter and blend with the honey, and beat until smooth. Any flavor may be added if desired.

A KIND WORD FROM AWAY OFF ACROSS THE GREAT WATER.

Please tell Mr. A. I. Root how much I enjoy Our Homes in GLEANINGS. I always read that section first. I was requested a few weeks ago to give an address on the moral aspects of beekeeping, and among other things I mentioned to the young people I was addressing that we had an American monthly journal on beekeeping that did not consider it incongruous to have a portion set apart for the scattering of the gospel. I hope that, when the old veteran has gone, some one among you will keep this section going.

SAM'L LUDHAM.

Webb's Farm, Lower Bentley, Bromsgrove, Worcestershire, England, Oct. 20, 1917.

BANKING BY MAIL AT 4%

Banking by Mail

with this bank is as simple a matter as writing a letter to a friend, and as safe as tho you deposited your money across the counter with your own hands.

There is no red tape nor difficulty of any kind connected with our system of Banking by Mail. Write today for booklet and full information.

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ASSETS OVER ONE MILLION DOLLARS

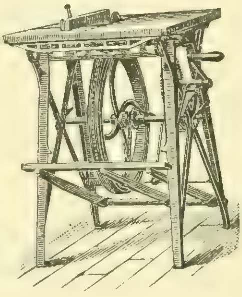
BARNES'
Hand and Foot Power
Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices

W. F. & JOHN BARNES CO
545 Ruby St
ROCKFORD, ILLINOIS



AROUND THE OFFICE

M.-A.-O.

A gasoline-engine manufacturer claims now to have heard from Emmet Bumpus, the same who wrote a certain beekeepers' supply house about his "extrackter" with no handle. First came a telegraph day message followed by a letter. So here follow more of E. Bumpus:

Mildew Hollow, Mich., Oct. 22, 1917.
The Star Engine Co.,
Detroit, Mich.

Cannot get engine stopped that runs honey-extractor. What shall I do? Both hands of myself and wife also all blisters. Still she runs like a devil. Answer quick. As I have twenty words more will say that I will write and tell you all about it. Only answer quick. EMMET BUMPUS.

The Star Engine Co.,
Detroit, Mich.

Deer Sirs:—Sum time ago i swopped my huny extrackter what yoo turn with a crank for a frixtion drive masheen that is run with wun of these here gasalene enjins, i red all the directions and then tried to start the enjin but the thing wouldent start. i munkied about 2 hours and well into noon until my wife she give me fits fer getting all dobbed up with greese and dirt and late for dinner to boot which she thinks is an awful crime. after dinner i red the directions agen and find out i have forgot to put in any gasalene. So i goes to my tin lizzy and gets about a kwart and then she runs o. k. she is still running. i tried to take a holt of the wheel to stop her an my wife she tried to and we each tried toogether at the same time but no yoose. i see that it is marked on the side 1½ horse-power so we have give up trying to get it stopt. the tank is still ½ full of gasoline so it will run about 5 hours yet. when yoo get this letter send us a telegraf at wunce, telling us how to stop said enjun. i have just desided to send yoo a telegraph myself, as it will get to yoo kwicker, so by the time yoo get this letter yoo wont need to send another telegraf. my wife she is still trying to get the d—— thing stopt. i tell her she is a foole to munky with masheenery what she don't understand and she tells me to shut my fase, so yoo see that is what a man gets for trying to keep his wife from getting hurt and mebbe crippled up for life. wimmin never can understand until to late, and then they blame yoo for what is there own fault.

hoping yoo are the same, i am
yoors truly,
EMMET BUMPUS.

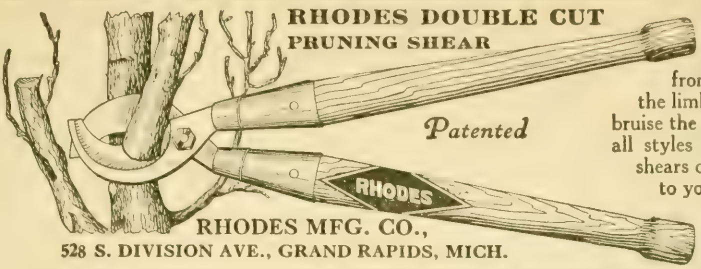
P. S.—my wife she got it stopt after all. she turned it upside down and all the gasalene run out and the wheels hit the floor and it kept going till it bumped against the wall.

* * *

Some evil-minded genius of a beekeeper wrote M.-A.-O. recently asking me if I couldn't entangle Dr. C. C. Miller in a verbal stand-up-and-knock-down with some other disputatious sunofagon of a beekeeper somewhere. I have lost the letter, but it seemed to mean that the writer would rather see Dr. Miller performing in a verbal combat with some poor galoot of a beekeeper who didn't know enough not to, than he would to attend a country circus and stay for the 10c concert after the main show.

* * *

This Around-the-Office department, with its epileptic cats, fishing-tackle, skunks, and Mel Pritchard, will turn up something useful yet, in spite of itself, for here comes G. H. Parker, of Palmyra, N. Y., who writes as follows: "In the November issue of Gleanings M.-A.-O. tells about skunks in an



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PRUNING SHEAR

Patented

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door. Write for circular and prices.

RHODES MFG. CO.,
528 S. DIVISION AVE., GRAND RAPIDS, MICH.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, REQUIRED BY THE ACT OF AUGUST 24, 1912.

Editor, E. R. Root, Medina, Ohio; Managing Editor, H. H. Root, Medina, Ohio; Business Manager, J. T. Calvert, Medina, Ohio; Publisher, The A. I. Root Co., Medina, Ohio.

Owners: The A. I. Root Co. Stockholders holding 1 per cent or more stock as follows:

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There are no bondholders, mortgagees, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities.

(Signed) E. R. Root, Editor.

Sworn to and subscribed before me this 1st day of October, 1917.

(Signed) H. C. West,
[Seal] Notary Public.
(My commission expires Mar. 27, 1919.)

Subscribers, Take Notice

It has been necessary to increase the subscription clubbing price of Green's Fruit Grower, American Poultry Advocate and Gleanings in Bee Culture, one year, to $1.25, instead of $1.00 as heretofore.

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Around the Office—Continued

apiary. Mel Pritchard's method of extermination differs from mine in that mine is absolutely odorless. By mixing one part of Rough on Rats with 10 parts of comb honey, and placing this in the apiary, I was able to get rid of the pests. I do not believe that skunks always eat the entire bee, but force out the contents of the abdomen. This fact led me to think that they were after the honey, and that theory was borne out by the readiness with which the poison mixture disappeared. Of course, it was necessary to place the poison at night and remove it before the bees were out in the morning, being sure to put it in the same spot each night.''

* * *

There is a fellow mortal named Herbert Lyon at Mt. Kisco, N. Y., who has handed me something that I don't know just how to take—so I'll let you all take it. He writes: ''Speaking of cats, you have no doubt often noticed a kitten playing with the old cat's tail, and how the youngster and onlookers enjoy it as the mother cat expresses her outraged dignity by frowns and tail wagging until, her patience exhausted, she lands a swat that knocks the nonsense out of the kitten's head for a while. Now, dear fellow, you have a lot of friends among the readers of Gleanings who would hate to see anything bad happen to you. So don't you think, considering the frivolous way you act sometimes toward the more dignified members of the editorial staff, that there is food for reflection in the above?'' Gosh, yes, I guess so.

* * *

A good many friendly letters have reached poor old M.-A.-O. during the last month, consoling me for what I have to put up with from the Roots and other pesterers. It's mighty comfortin', and you one and all have my thanks — especially that preacher at Whitehouse Station, N. J. Just after getting this good man's letter I rushed right out to Uncle Amos I. Root and hollered: ''Another minister on my side.'' Really and truly, he turned right around and started for Florida that minute. It was the day after election, and he was so tickled over Ohio's going dry (which it didn't—durn it) that he forgot to fire me out thru the back cover page before leaving for his winter

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Around the Office - Continued

quarters. I wish Ohio would go dry 365 days in the year.

* * *

I just wish what happened to me out in my barn last night had a-happened to the whole editorial Root shebang and everybody else that is picking on to me for using just natural language when my deepest feelin's are roiled up. If it had, they might think different about it, and not keep pilin' on to me and threatenin' me and my job here. You see, it came on awful cold all of a sudden yesterday. I had dug the last of my potatoes the day before. It was warm that day, and a geewhilliken good afternoon for bass to bite. So I worked a sort of compromise with my waverin' disposition to labor, and instead of sorting over my potatoes and getting them safe into the cellar, as I suppose I orter have done, I just toted them in the wheelbarrow as far as the old barn and dumped them any way at all in one of the horse-stalls there. Then I sneaked my fishin' tackle out the back door of the house —some that dear old kitty overlooked when she left me—and I went and had a good afternoon on the creek with my neighbor Lutz. There wasn't any Roots around to pester, and when a fish would get on my hook and then get off again earlier than I callated for him to get off, I just commented on it to him and myself and the creek and the woods around there just as I felt like. Give me a fishin' stream back of a big woods with no Roots around, and I'll show you 24-carat-fine freedom of the press and American public opinion as what Thomas Jefferson was always talking about and stickin' up for. Yes, siree, for full and unchoked freedom of expression of the real sincere kind give me a lonely fishin' creek just after the biggest one has got off.

I see I am side-stepping a little here by my discussion of freedom and liberty. But I had a good comfortin' time on the creek that warm afternoon two days ago, and was soothed considerably by it until that awful cold spell began surging up yesterday afternoon. It surged over me a good deal particularly, for I began thinking about those potatoes in the horse-stall and recollecting that the last time I had promised my poor dear long-suffering wife that I would nail some siding on to that stall side of the barn I had gone fishing again that time and left it till when winter coming nigher would make such labor

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Around the Office—Continued

seem reasonabler and more timely to perform. So ventilation on that one side of my barn remained unchoked right up to last night and yet. I knew the Mrs. would want to converse along these lines at the supper-table last evening, so I stayed right over here to the office till almost plumb dark, wishing I knew of a world somewhere made up mostly of good fishin' creeks and where potatoes grow right in the bins in the cellar where they orter grow and already dug, also where barn siding grows natterel on barns and stays growed on. Then I sneaked home. It was a ornery feeling I had, but I braced up at the front door, rushed in as if I had done 'most all the business transacted on the western hemisphere that day, didn't take time to even look at my wife standing on the far side of the dining-room table all set for a heart-to-heart discussion of potatoes and barn siding. I just haughtily swept one doughnut and a pickled beet off the table and kept careerin' forward and onward and business-ward for the cellar stairway where I expected my lantern to meet me. It was there all right but the globe was gone. I recollected then that on another good fishin' day I had put off getting a new one till I got around to put on the barn siding. But I didn't falter or loiter around the house because of no lantern globe. No, siree. I set sail for the barn via downstairs and the outside cellar door. I felt that my dear wife was waiting somewhere along the usual-traveled kitchen route. So I didn't entourage that way. I went the other way. I preferred it very much. It was darker in the cellar than a black cat's whole body, but I didn't mind it under the circumstances. I was hankerin' for solitude just then so far as anybody I had ever married was concerned. But I did just then get to wishin' for the company and comfortin' assistance

(Rest of this article all censored)

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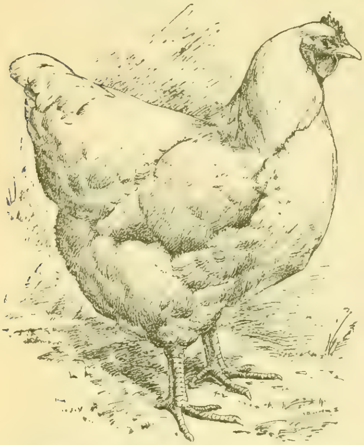

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